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The National Institutes of Health (NIH) operates a transportation system that provides motor pool, shuttle bus, delivery, moving, and vehicle maintenance services to the NIH community. Included in its fleet of 235 vehicles are those dedicated to police, fire safety, maintenance, housekeeping, and other support functions. That transportation system costs NIH $4.2 million a year.

The NIH wants to ensure that it has the appropriate internal controls in place for the transportation system and it wants to understand what parts of that program can be administered cost effectively using contract labor and equipment.

We evaluated current internal controls and found no substantial abuses or material evidence of waste, loss, unauthorized use, or misappropriation. To improve the control of its transportation services we recommend that NIH establish oversight responsibility within the Transportation Branch and appoint local fleet managers within the major groups of vehicle users. We also recommend measures to ensure adequate justification, security, and proper use of vehicles and services.

We investigated various mixes of Government and contract labor, vehicles, facilities, and maintenance for the transportation services and concluded that cost-effective contracting alternatives are available within some parts of the Transportation Branch at NIH. We recommend that NIH increase its use of contracts to satisfy transfer services requirements, use contracts awarded through full-and-open competition to satisfy shuttle services requirements, and use the General Services Administration leasing program to provide medium and heavy trucks in lieu of purchasing those vehicles outright. These contract alternatives will cost effectively reduce the current work force by 23 employees.

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Executive Summary

TRANSPORTATION SERVICES AT THE NATIONAL INSTITUTES OF HEALTH

A Review of Internal Controls and Contracting Alternatives

The National Institutes of Health (NIH) operates a transportation system that provides motor pool, shuttle bus, delivery, moving, and vehicle maintenance services to the NIH community. Included in its fleet of 235 vehicles are those dedicated to police, fire safety, maintenance, housekeeping, and other support functions. That transportation system costs NIH $4.2 million a year. The NIH wants to ensure that it has the appropriate internal controls in place and, without adversely affecting service or cost, it wants to know which services could be provided using contract labor, should it need to make employee positions available for its biomedical research programs.

INTERNAL CONTROLS

We evaluated current internal controls and found no substantial abuses or material evidence of waste, loss, unauthorized use, or misappropriation. We did, however, identify a number of improvements that, if made, will result in better control.

First, to ensure that NIH policies and procedures are followed, we recommend that the Associate Director for Administration establish oversight responsibility within the Transportation Branch and appoint local fleet managers for each major group of vehicle users at NIH. The local fleet managers should be responsible for ensuring that vehicles are used properly, that vehicle users are aware of NIH vehicle use procedures, and that annual utilization reviews and justifications are completed for each vehicle assigned to them. The Transportation Branch should be responsible for providing annual training for local fleet managers in those areas.

Second, to ensure that vehicles are adequately justified, we recommend that the Associate Director for Administration modify the vehicle justification policy now

being used. The new policy should allow the use of a dedicated motor vehicle only on the basis of specific minimum mileage requirements, specific minimum utilization requirements, or economic justification showing the use of that motor vehicle to be the least-cost alternative in meeting specific needs. Vehicle justifications should be provided annually for all fleet vehicles and should contain a signed statement by an Institute, Center, or Division administrative officer certifying that the vehicle is justified on the basis of one of the above criteria and that the vehicle used is the most cost-efficient type of vehicle to meet their needs.

Third, to ensure the security of Government property and material, we recommend the following actions:

- The Director, Division of Logistics, should limit night access to motor pool and shuttle bus parking areas through use of a fence or other means.
- The Transportation Branch Chief should use inventory control software to track automotive parts balances.
- The Director, Division of Logistics, should require the custodians who send material in surplus property moves to keep a copy of the transfer document that is signed by the individual engaged in moving that property.

Fourth, to ensure that Government property is properly used, we recommend that the Transportation Branch Chief:

- Direct bus drivers to periodically check for NIH identification of passengers on off-campus bus routes.
- Write and distribute a concise statement of what constitutes proper use of a Government vehicle.

Finally, we recommend that the Transportation Branch Chief document the specific procedures to be followed in four critical areas: annually determining vehicle requirements, ensuring the security of property and material, ensuring the proper use of Government property, and controlling the repair and maintenance of the vehicle fleet. By following our internal control recommendations, NIH will prevent future occurrences of abuse, waste, loss, unauthorized use, or misappropriation.

USE OF CONTRACT LABOR

We investigated various mixes of Government and contract labor, vehicles, facilities, and maintenance for the transportation services to determine whether those services could be provided cost-effectively by contractors. We concluded that cost-effective contracting alternatives are available within some parts of the Transportation Branch at NIH. If the availability of personnel resources diminishes within the Transportation Branch over time, we recommend that the Director, Division of Logistics pursue the following prioritized sequence of contracting options:

1. Increase the use of contractors to satisfy transfer services requirements but use General Services Administration (GSA) negotiated contracts instead of current purchasing agreements. We expect that strategy to cost 40 percent less than the cost of an in-house operation and 48 percent less than the current annual contract costs of $1.8 million. It will reduce the current in-house transfer services work force by 8 full-time equivalent (FTE) employees.

2. Use contracts awarded through full-and-open competition to satisfy shuttle bus service requirements for management, bus drivers, and vehicles. We found from a sample of Government set-aside contracts for shuttle services that such contracts cost 30 percent more than contracts awarded through full-and-open competition. The use of full-and-open competition contracts will result in costs equal to those of the current in-house shuttle operations and will reduce the current work force by 13 FTEs.

3. Use the GSA vehicle leasing program to provide medium and heavy trucks instead of purchasing them outright from GSA. That change will limit the activities of the garage operation to the maintenance and repair of sedans, station wagons, and light trucks and will permit the reduction of 2 FTEs. It will save NIH $144,000 annually.

Our analysis identifies specific break-even labor and vehicle rates that can be used to evaluate contractor bids for moving services and shuttle services. The break-even rates reflect the cost of performing those services with GSA-supplied vehicles and NIH-supplied labor, in both cases the next cheapest alternative we investigated. In pursuing contractor-run operations, NIH will need one to two additional persons in each functional area to oversee the contract operations: our FTE reduction figures include those additions.

Based on our analysis, NIH can improve its internal controls and reduce its dependence on in-house employees in providing effective, efficient transportation services.

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BACKGROUND

INTRODUCTION

At the National Institutes of Health (NIH), more than 14,000 persons perform biomedical research into the causes, prevention, and cure of diseases. Many of those employees work on a 300-acre reservation in suburban Bethesda, Md., in a campus-like setting with more than 50 laboratories, clinics, offices, animal quarters, and other specialized facilities. NIH also has several off-campus sites within a few miles of Bethesda, and it operates some programs in Baltimore and Frederick, Md., and further away at locations in Montana and North Carolina. It is divided into 26 Institutes, Centers, and Divisions (ICDs), which focus on specific areas of research.

In support of its research program, NIH operates a transportation system that uses Government and contractor-furnished vehicles and services to move personnel and material. Most of the vehicles are acquired through the General Services Administration (GSA) and owned and maintained by NIH.

The NIH wants to make certain that its transportation system is well managed. It has two primary objectives for doing so: first, to ensure Government resources are used prudently and cost-effectively and that necessary internal controls are in place to prevent misuse of those resources; and second, to ensure that the appropriate mix of Government and contract vehicles, operators, and management is in place to provide transportation services as effectively and as reliably as possible. The NIH is particularly interested in identifying the most cost-efficient opportunities for using contract labor should it become necessary to allocate its full-time equivalent (FTE) employees to research rather than services.

This report reviews policies governing Federal agency transportation programs and highlights areas in the NIH Transportation Branch operation in which additional internal controls may be required. Our findings, conclusions, and recommendations on internal control are in Chapter 2 of this report. The report also identifies the specific mixes of contractor and in-house resources that would be most cost-effective in providing the needed services. We report our findings, conclusions,

and recommendations on contracting in Chapter 3. The report considers the motor pool operation, the shuttle bus routes, the in-house vehicle repair and maintenance operation, and the movement of equipment and supplies within the organization.

TRANSPORTATION BRANCH ORGANIZATION AND OPERATION

The Transportation Branch at NIH is part of the Division of Logistics, which is under the Associate Director for Administration. It consists of four parts:

- The Motor Pool Section, which operates an in-house vehicle-rental service available to all NIH ICDs. Users pay a daily rate for using a vehicle for one or more days; their vehicle usage level is not high enough to justify allocation of a vehicle on a full-time basis. The Motor Pool Section also provides a special messenger service for delivering nonenvelope types of items such as blood or urine samples. The motor pool is operated exclusively by NIH employees and uses NIH-owned vehicles.

- The Shuttle Section, which operates several bus routes both on-campus and off-campus. These buses are available to anyone in the NIH community. The off-campus routes are used primarily by off-site employees who need to come to the reservation for meetings and other purposes. The on-campus routes primarily connect geographically distant buildings or satellite parking lots and offices. One shuttle route is currently provided under contract, and the others are operated exclusively by NIH employees using NIH-owned buses.

- The Garage Section, which maintains and repairs the 235 vehicles in the NIH fleet. Many of those vehicles are dedicated to specific functions at NIH including grounds and building maintenance, fire department, police department, housekeeping, and various other services. Some vehicles are also dedicated to specific research ICDs for their exclusive use in transporting people, animals, and equipment. The Garage Section provides quarterly preventive maintenance and performs most of the required repairs to the vehicles with in-house employees and a repair shop located on the campus.

- The Transfer Section and its associated contractors, whose primary responsibilities entail the movement of surplus property to a central storage area, the movement of office and laboratory equipment, and the movement of supplies from the supply warehouse to the users of those supplies. In recent months, the size of the Transfer Section has decreased dramatically, and most of the work that was once done in-house is now handled by six different moving contractors.

These four functions are coordinated by the Office of the Chief which also provides clerical and management support for administering the dedicated vehicle fleet and the contracts used to support the Transfer and Shuttle Sections.

The workload from FY90 through FY93 is shown in Table 1-1. The Motor Pool averages close to 4,500 vehicle use days a year and spends 6,000 or more labor-hours a year on its messenger and delivery service. Until FY92, the Garage Section had been billing more than 5,000 labor-hours a year for repairs and maintenance. It is now billing fewer than 3,000 hours a year, a significant decline.[1] The Transfer Section workload provided by in-house employees has dropped from a high of almost 30,000 hours in FY91 to an expected level of approximately 8,000 hours in FY93. In contrast, the contractor workload for transfers and moves has gone from slightly more than 40,000 hours in FY90 to an expected level of just under 80,000 hours in FY93. The net workload for transfers and moves has increased from 66,000 hours in FY90 to an expected level of 87,000 hours in FY93. The shuttle buses currently operate at a level of about 19,000 in-house operating hours a year and almost 9,000 contractor-provided operating hours per year.

The Transportation Branch funds itself by charging the ICDs for its services. Some of the charges are related directly to services provided (depreciation, maintenance, and other vehicle-related charges; delivery charges; and transfer services) and others are simply allocations made across all departments at NIH (cost of shuttle services and Transportation Branch administration). All income and expenses flow through the NIH Service and Supply Fund. The Transportation Branch operates under a budget of $4.2 million.[2] Figure 1-1 shows the FY92 breakdown of that budget by cost category. Of the budget, 41 percent was spent on labor and benefits, 26 percent on contracted transfer services, 10 percent on contracted shuttle bus operations, and the remaining 23 percent on other expenses including automotive parts and new motor pool vehicles. Figure 1-2 shows the FY92 cost breakdown by functional area. Six percent was spent within the Office of the Chief, 10 percent for motor pool services, 19 percent for garage services (maintenance and repair), 41 percent for transfer services, and 24 percent for shuttle services.

[1]We believe that the Garage Section is currently performing the same workload as in FY90 and FY91 but billing fewer hours to its customers.

[2]That figure was obtained from FY92 data and represents obligations for the Transportation Branch net of payments made to the NIH Service and Supply Fund for transportation services provided by one function within the branch to another function within the branch.

TABLE 1-1

ANNUAL TRANSPORTATION BRANCH WORKLOAD

(FY90 to FY93)

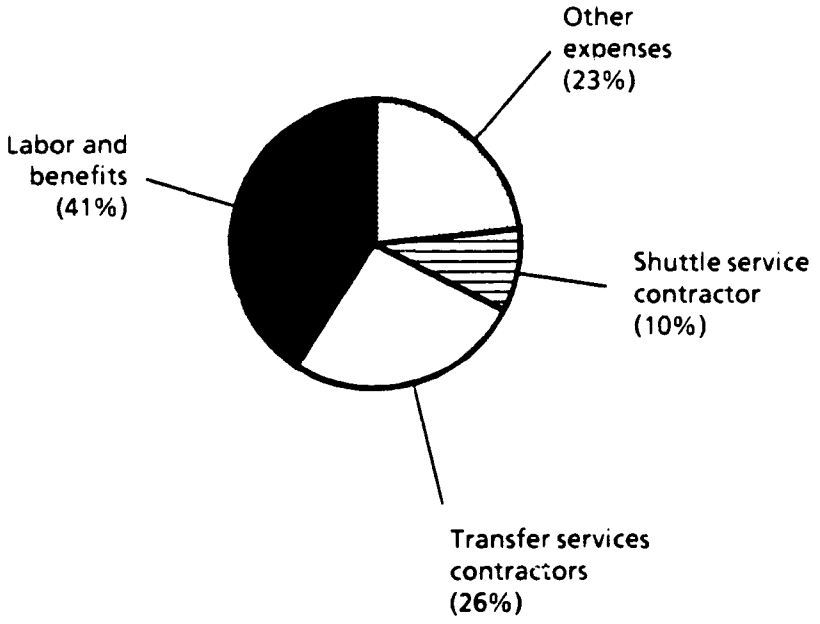
Branch	FY90	FY91	FY92	Projection FY93
Motor Pool Section				
Vehicle use days	4,088	4,265	4,862	4,272
Messenger hours (regular)	4,831	4,880	4,632	2,796
Messenger hours (overtime)	947	1,351	1,516	1,198
Garage Section[a]				
Billed hours (regular)	4,791	4,987	2,913	2,110
Billed hours (overtime)	864	235	286	526
Transfer Section				
In-house hours (regular)	24,732	26,948	18,012	7,857
In-house hours (overtime)	766	2,745	703	127
Contractor hours (regular)	39,947	50,936	74,798	78,869
Contractor hours (overtime)	864	67	0	0
Shuttle Section				
In-house operations (hours)	N/A	N/A	19,125	N/A
Contractor operations (hours)	N/A	N/A	8,750	N/A

Sources: Motor Pool Section, Garage Section, and Transfer Section data are from Accounting Branch, Division of Financial Management. Shuttle data are from a compilation of contractor and in-house bus service schedules

Note: N/A = not available.

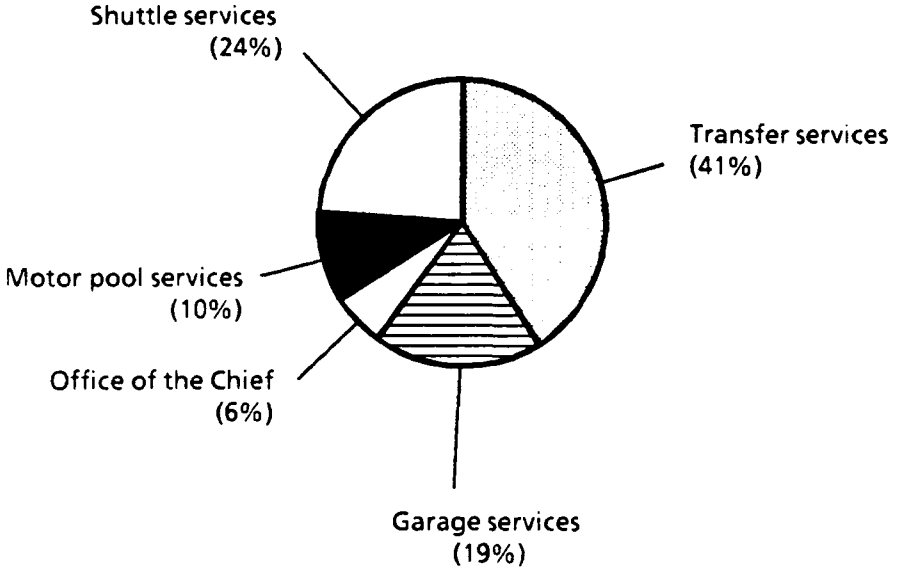
[a]FY93 Garage Section projections based on data from the first 6 months of FY93. Since that time the billing process has been modified and will result in a larger number than the one we have projected

Table 1-2 shows the specific service-related rates in effect for FY92. Those rates are recalculated annually so that the costs of those services can be recovered each succeeding fiscal year. Rates for FY93 are the same as those for FY92. Note that shuttle bus users are not charged directly; costs for that operation are recovered through the Management Fund charges allocated across all ICDs. The NIH Service and Supply Fund recovers its shuttle service costs from the Management Fund.



Note: Total budget = $4.2 million (FY92).

FIG. 1-1. TRANSPORTATION BRANCH BUDGET BY COST CATEGORY



Note: Total budget = $4.2 million (FY92)

FIG. 1-2. TRANSPORTATION BRANCH BUDGET BY FUNCTIONAL AREA

TABLE 1-2

TRANSPORTATION BRANCH FY92 SERVICE RATES

Branch	FY92 Rate
Garage	
Regular time	$42 per hour plus parts
Overtime	$63 per hour plus parts
Motor Pool rentals	
Sedans	$28 per day
Light trucks	$36 per day
Heavy trucks	$75 per day
Dedicated vehicle charges	
Sedans	$120 per month
Light trucks	$120 per month
Heavy trucks	$120 per month
Dedicated vehicles are also billed for the actual cost of maintenance, gasoline, repairs, and depreciation.	
Moving services	
Regular time	$20.00 per hour per employee
Overtime	$30.00 per hour per employee
Vehicle cost	$9.00 per hour
The minimum labor charge is 1 hour for one employee per job.	
Messenger services	
NIH, Bethesda area	$10.00 per work order
Metropolitan Washington, D.C., area	$15.00 per work order
Outside metropolitan area	$30.00 per work order

Note: FY93 rates are the same as FY92 rates.

CHAPTER 2

INTERNAL CONTROL ANALYSIS

In analyzing the internal controls of NIH transportation services we followed a three-step approach. First, we reviewed the operation by interviewing key staff within the Transportation Branch and documenting current procedures. We also interviewed some of the largest users of dedicated vehicles within the NIH community to understand how they use vehicles and how they achieve the appropriate control. Second, we reviewed NIH, Department of Health and Human Services (DHHS), and other Federal policies, regulations, and laws relating to motor vehicles and transportation services. Finally, we compared the information and observations obtained from our on-site interviews with a checklist of applicable policies to evaluate the degree of control within the NIH transportation services and fleet management functions.

APPLICABLE POLICIES

We found three principal sources of law, policy, and regulations that apply to NIH transportation services:

- The Federal Managers' Financial Integrity Act (FMFIA) (1982).[1] This public law does not refer specifically to any functional area but it states that "...controls of each executive agency shall be established...and shall provide reasonable assurances that...funds, property, and other assets are safeguarded against waste, loss, unauthorized use, or misappropriation."

- The Federal Property Management Regulations (FPMR). These regulations are issued by GSA under authority granted to it by the Federal Property and Administrative Services Act (1949). The applicable sections of the FPMR are listed in the Code of Federal Regulations (CFR), Title 41, Chapter 101, Subchapter G, Part 101-38, entitled "Motor Equipment Management." These regulations pertain specifically to Government-owned motor vehicles.

- *The DHHS Logistics Management Manual* (LMM), Subchapter G, Part 103-38, entitled "Motor Equipment Management." These regulations are published by DHHS and they supplement the FPMR.

---

[1] Public Law 92-255 [H.R. 1526]; September 1982.

While the FPMR and the *DHHS LMM* refer to specific aspects of transportation services, the FMFIA is much more general. In addition to these documents, we found several internally distributed memorandums from the administrative staff to the NIH community about vehicles and their use; however, those memorandums seemed to reflect policies already described in one of the three sources above.

CHECKLIST OF POLICIES AND REGULATIONS

We reviewed the FPMR and the *DHHS LMM* in detail and designed a checklist reflecting applicable policies on transportation services. On that checklist we also address specific areas subject to waste, loss, unauthorized use, and misappropriation, which were not specifically identified in the FPMR or the *DHHS LMM* but are based on our knowledge of NIH operations and on visits to different agencies with similar operations. The checklist is shown in Appendix A.

The checklist is divided into three parts. The first part contains questions pertaining specifically to the functions under the direct control of the NIH Transportation Branch: the motor pool, shuttle, garage, and transfer services. These questions are pertinent to possible waste, loss, unauthorized use, or misappropriation and have no specific references to either the FPMR or the *DHHS LMM*.

The second part of the checklist is a short set of questions addressing oversight responsibility. Its purpose is to identify individuals responsible for vehicles in DHHS, NIH, and the specific ICDs. It also contains questions about training for the responsible personnel within the ICDs.

The third part of the checklist contains questions about items that should be monitored for all vehicles in the fleet. It is divided into two subparts: items pertaining to component responsibility and those pertaining to local responsibility. ("Component" is a DHHS term that in this case refers to NIH, and "local" refers to the specific group using the vehicles such as the Division of Engineering Services or the Division of Safety.) The areas that must be monitored at the component level include replacement and acquisition, identification and registration, and maintenance. The areas that must be monitored at each local organization include official use of vehicles, procedures for vehicle use, and vehicle utilization. The NIH Transportation Branch has both component responsibilities and local responsibilities. It is responsible for management of the NIH fleet as a whole and is locally responsible for the vehicles assigned to the motor pool, the shuttle service, the garage, and the

transfer services. That part of the checklist also contains references to specific parts of the FPMR or *DHHS LMM*.

We used the checklist as the basis for questions in our interviews with NIH personnel. We interviewed administrative persons in five areas with large concentrations of dedicated vehicles: the Police Branch, the Fire and Emergency Response Section, the Division of Space and Facilities Management, the North Maintenance Engineering Section, and the Grounds Maintenance and Landscaping Branch. Appendix B presents the specific list of questions we asked each of the administrators.

FINDINGS AND CONCLUSIONS

The checklist includes all the conditions we found under which waste, loss, unauthorized use, or misappropriation might occur. We identified the following five broad areas that we believe are most critical and focused our study on them:

- Oversight responsibility
- Determining vehicle requirements
- Security of property and material
- Proper use of Government property
- Repair and maintenance.

While the FPMR, the *DHHS LMM*, and the FMFIA prescribe policy and laws for establishing vehicle control and preventing waste, loss, unauthorized use, and misappropriation, no formal procedures have been documented and distributed specifically for the various groups within NIH to execute DHHS policy. Within the five broad areas, we evaluated the following 16 specific procedures:

1. Justification of vehicles
2. Use of cost-efficient vehicles to serve needs
3. Replacement of vehicles
4. Security of fuel
5. Security of automotive repair tools and equipment
6. Security of dedicated vehicles

7. Security of motor pool vehicles
8. Security of automotive parts
9. Security of surplus equipment being moved
10. Proper use of the garage facility
11. Proper use of shuttle services
12. Proper use of Government vehicles
13. Billing for repairs provided by the NIH garage
14. Billing for contractor repairs
15. Preventative maintenance schedule
16. Vehicle damage.

The individuals responsible for executing those 16 specific procedures could not provide us with any documentation describing them.

The absence of written procedures in the 16 areas is not a deficiency, but we believe that with written procedures, NIH vehicle custodians or transportation providers can better execute policies essential for maintaining control or preventing fraud, waste, and abuse. Written procedures may be used periodically to educate employees and contract personnel on the dangers of poor practices.

Our visits to the various sections within the NIH Transportation Branch and to the large users of dedicated vehicles did not uncover abuses. In general, vehicle use at NIH is sufficiently controlled to prevent substantial abuse. However, we believe tighter control of vehicles in specific areas will prevent or minimize the opportunity for abuse in the future. In the remainder of this section, we present our findings and conclusions in each of the five critical areas, and in the last section of this chapter, we recommend actions that will improve control.

Oversight Responsibility

The *DHHS LMM* assigns to its component fleet managers the responsibility for implementing DHHS policy and for providing advice and guidance to the organization's local motor vehicle managers.[2] In this subsection, we identify the

[2] *DHHS LMM* section 103-38.5002(b).

major groups of vehicle users at NIH and evaluate the degree of vehicle control that exists within those groups.

We studied the management of the NIH vehicle fleet and found that most of the vehicles are used for service functions. Table 2-1 shows the distribution of vehicles among the various groups. The research ICDs at NIH (all those NIH organizations listed below "Transportation Branch" in Table 2-1) are using only 44 out of the 235 vehicles (19 percent). Of those 44 vehicles, 15 of them are assigned to off-campus locations where the NIH motor pool service is not available. Most NIH vehicles are used by one of six groups:

- Division of Logistics, Transportation Branch (84 vehicles)
- Division of Engineering Services (41 vehicles)
- Division of Security (21 vehicles)
- Division of Safety (17 vehicles)
- Division of Space and Facilities Management (11 vehicles)
- National Center for Research Resources (NCRR) (11 vehicles)

These groups account for 185 of the 235 total vehicles or 79 percent. They are the primary "owners" of vehicles at NIH.

We also noted that the Frederick Cancer Research Facility (FCRF) has 66 Government-owned vehicles: 11 minivans, 1 sedan, 24 vans of various kinds, 29 pickups, and 1 carryall. Those vehicles are not included in Table 2-1. They have been purchased by a contractor (Program Resources, Incorporated) on behalf of the National Cancer Institute. Although the contractor is entitled to purchase vehicles with contracting officer approval, those vehicles are owned and registered by the Government and are therefore subject to the same policies and regulations as the NIH vehicles in Bethesda.

From interviews with some of the major vehicle users, we found that local control differs significantly among the organizations. Local procedures at one extreme require users to sign a specific statement of what constitutes appropriate use of the vehicle and the penalties for abusing that privilege; at the other extreme, they consist of doing nothing. In some organizations, one specific person is responsible for the dedicated vehicles, and in others, that responsibility is spread among several

TABLE 2-1

NIH VEHICLE ALLOCATION MATRIX

NIH organization	Sedans	Station wagons	Mini-vans	Utility/ carryall	Passenger vans	Buses	Ambu-lances
Clinical Center	1	1	0	0	2	0	2
Engineering Services	0	0	0	4	0	0	0
Financial Management	1	0	0	1	0	0	0
Shipping	0	0	0	0	0	0	0
Safety	2	2	1	1	0	0	1
Facilities Management	4	3	1	1	0	0	0
Security	11	2	1	5	0	0	0
Support Services	0	0	0	1	0	0	0
Transportation Branch	17	12	5	4	15	9	0
NCI	2	1	0	0	0	0	0
NCRR	0	1	1	3	0	0	0
NIAID	3	2	1	0	0	0	0
NINDS	0	1	0	0	0	0	0
Miscellaneous ICDs	1	2	0	0	0	0	0
Baltimore	0	0	1	0	0	0	0
Montana	2	1	1	0	0	0	0
North Carolina	0	0	0	0	0	0	0
St. Elizabeth's (NIMH)	0	0	3	1	0	0	0
Total	44	28	15	21	17	9	3

NIH organization	Dump trucks	Delivery vehi-cles	Work vans	Pickups	Miscel-laneous	Total[a]
Clinical Center	0	0	0	1	0	7
Engineering Services	5	0	1	28	3	41
Financial Management	0	0	0	0	0	2
Shipping	0	2	0	0	0	2
Safety	0	2	3	2	3	17
Facilities Management	0	0	2	0	0	11
Security	0	0	1	1	0	21
Support Services	0	1	4	0	0	6
Transportation Branch	0	1	12	4	5	84
NCI	0	0	0	0	0	3
NCRR	0	2	2	2	0	11
NIAID	0	0	0	1	0	7
NINDS	0	0	1	1	0	3
Miscellaneous ICDs	0	0	1	1	0	5
Baltimore	0	0	0	0	0	1
Montana	1	0	0	2	0	7
North Carolina	1	0	2	0	0	3
St. Elizabeth's (NIMH)	0	0	0	0	0	4
Total	7	8	29	43	11	235

Note: NCI = National Cancer Institute, NCRR = National Center for Research Resources, NIAID = National Institute of Allergy and Infectious Diseases, NINDS = National Institute of Neurological Disorders and Stroke, NIMH = National Institute of Mental Health

[a]Numbers do not include 66 vehicles at Frederick Cancer Research Facility

individuals. Some of the responsible individuals are aware of vehicle-related costs and others do not have access to that information. The procedures used to account for vehicle use vary widely.

We found that no interaction exists between the Transportation Branch and the services contractor at FCRF. The *DHHS LMM* specifically assigns component fleet managers (e.g., the NIH Transportation Branch Chief) the responsibility for reviewing local operations to ensure that FPMR and DHHS requirements are carried out.[3] The *DHHS LMM* suggests that they are also responsible for operations under contract to their agencies although it does not explicitly so state. In the case of FCRF, NIH is dependent upon the contractor or a contracting officer to establish measures of oversight and control as they deem appropriate. We were not permitted to visit FCRF in the course of this study to assess the adequacy of those measures.

Our findings in the area of oversight responsibility lead us to conclude that NIH needs more consistent local control of vehicles across the ICDs so that information about vehicle use and control can be easily disseminated to the users of vehicles at NIH. The task of disseminating information to the NIH population about vehicle usage and control is difficult because not all parts of NIH have local fleet managers for groups of vehicles, and NIH does not have any formal training for locally responsible individuals on a periodic basis. NIH has the opportunity to improve the flow of information about vehicle usage and control because it has only a few key "owners" of vehicles and most of those owners are organizationally under the administrative branch of the agency in the Office of the Director (OD). One person in each NIH owning agency could regularly communicate with the Transportation Branch on vehicle control procedures. That regular communication could be in the form of annual training sessions. The sections below that address the remaining four critical areas discuss the adequacy of specific procedures currently in place.

Determining Vehicle Requirements

In this section, we address the process of justifying the use of vehicles and deciding the type and quantity of vehicles needed to satisfy a particular need. The *DHHS LMM* prescribes mileage requirements that justify the use of dedicated vehicles.[4] (The *DHHS LMM* permits alternative forms of justification but does not

[3] *DHHS LMM* section 103-38.5002(b)(6).

[4] *DHHS LMM* minimum mileage requirements are listed in Appendix A, page A-17.

clearly define or tailor them for specific agency use.) In this area, we compared the use of NIH vehicles to the DHHS mileage guidelines, evaluated written vehicle justifications provided by dedicated vehicle users, made observations about the cost efficient use of vehicles, and analyzed the size of the motor pool vehicle fleet.

By comparing the odometer mileage to vehicle age, we found that 68.9 percent of the NIH vehicles do not meet the guidelines for mileage utilization required by the DHHS. In this calculation, we excluded vehicles purchased in 1992 and special-purpose vehicles such as dump trucks, ambulances, and fire trucks. Table 2-2 shows a breakdown of the number of vehicles of each type and whether they meet the DHHS guidelines.

TABLE 2-2

COMPLIANCE WITH DEPARTMENT OF HEALTH AND HUMAN SERVICES ANNUAL MILEAGE REQUIREMENTS

Vehicle type	Annual miles required	Vehicles meeting requirement	Vehicles not meeting requirement
Sedans	10,000	12	16
Station wagons	10,000	8	14
Minivans	9,000	2	5
Utility/carryalls	9,000	0	12
Utility 4 x 4s	7,500	2	1
Passenger vans	9,000	9	8
Delivery vehicles	6,000	0	6
Work vans	6,000	8	16
Pickup trucks	9,000	10	30
Truck tractors	10,000	1	2
Miscellaneous	6,000	0	5
Total (%)		52 (31.1%)	115 (68.9%)

Note: Excludes all 1992 vehicles, all Fire and Emergency Response Section vehicles, all Police Branch vehicles, all dump trucks, and all vehicles at the FCRF.

We found cases in which the use of a dedicated vehicle was appropriately justified even though the vehicle did not meet DHHS minimum mileage guidelines. We examined written justifications on file with the Transportation Branch and

discovered that in some instances use of a dedicated vehicle was appropriately justified on the basis of its extensive use during normal working hours. In other cases the justification was based on the vehicle's meeting a particular need at a lower cost than any alternative. While these justifications are appropriate, no current NIH or DHHS policy exists that clearly delineates alternative bases for justification.

During our visits to the Bethesda campus we observed a few instances of inefficient vehicle use. Insofar as cost-efficiency is concerned, we saw some vehicles serving a purpose that could have been served by less expensive vehicles. The NIH Police Branch, for example, uses 4 four-wheel-drive Chevrolet Blazers for parking ticket and traffic control duty on the Bethesda campus. Although those vehicles were justified for use during inclement weather, the risk of such weather in the Washington, D.C., area is minimal. We find it to be poor justification for the expenditure of money on such expensive vehicles. Administrators need to ask why specific types of vehicles are needed. This is an isolated example and does not indicate a pattern of abuse. However, it does suggest that economy was not applied to the selection of that vehicle type.

From a vehicle use standpoint, based on a limited number of observations, we noticed that the Police Branch vehicles were not heavily utilized during normal working hours. Those vehicles, however, meet mileage requirements. We also noticed that while the Fire and Emergency Response Section has 9 vehicles assigned to it to serve a variety of emergency needs, it has only 10 persons on duty at any one time to use them. These vehicles have a legitimate use, but their utilization is low. Other Government fire departments have fewer vehicles for the same size work force; however, NIH may have more fire hazards to control.

We found that, for most vehicle types, the number of vehicles in the motor pool/shuttle service fleet is appropriate. Using a probability model, we calculated the minimum and maximum numbers of vehicles needed to satisfy daily demands for the different types of vehicles given their usage patterns in February and March 1992. We did find an excess of three 8-passenger vans and an excess of lift-equipped buses and vans, but they were outweighed by shortages of non-lift-equipped buses and vans. The lift-equipped vehicles are required by the Americans with Disabilities Act. The results of our analysis are shown in Table 2-3.

TABLE 2-3

MOTOR POOL AND SHUTTLE SERVICES VEHICLE ANALYSIS

Vehicle type	Usage data[a] (vehicles per day)			Current vehicles[b]	Suggested minimum number of vehicles[c]	Suggested maximum number of vehicles[d]
	Mean	Variance	Observations			
15-passenger vans	6.1	2.0	41	10	7	9
20-passenger buses	3.5	0.7	41	4	4	6
Sedans	9.2	5.9	41	12	10	12
Station wagons	3.5	2.7	41	5	4	6
4 x 4 vehicles	1.4	0.6	41	4	2	4
Carryalls	2.7	0.8	41	5	3	5
Lift equipped vans	0.0	0.0	41	2	0	1
36-Passenger buses	1.0	0.7	41	2	2	3
8-Passenger vans	0.6	0.5	41	6	1	3
Pickup trucks	0.2	0.2	41	2	1	2
Lift equipped buses	0.0	0.1	41	3	0	1
Total	28.2	17.0		55[e]	34	52

[a]Usage data from February and March 1992

[b]Current vehicles as of 21 October 1992

[c]Suggested minimum vehicle calculation assumes fixed assignment of vehicle

[d]Suggested maximum vehicle calculation assumes random use of vehicle and 95 percent probability of vehicle availability when needed

[e]One step van not included in analysis. Also, surplus vehicles are not included

We conclude that the current processes for justifying the use of a vehicle and for determining the size and type of vehicles required needs some modification. Many of the dedicated vehicles in the NIH fleet do not meet *DHHS LMM* mileage guidelines for qualification as dedicated vehicles even though some of those vehicles have been adequately justified using other means. We believe that the *DHHS LMM* mileage guidelines should be relaxed for certain vehicles but that some specific alternative guidelines should be used for justification. Five possible ways to justify the use of a dedicated vehicle are:

- *DHHS Mileage Use Criterion:* This criterion is presented in Appendix A Section III.B.3.a. It is currently the only criterion accepted other than

verification from an administrator that a vehicle is needed to meet program objectives.

- *Time Utilization Criterion (Fixed Use)*: This criterion is based on showing that a vehicle is used for a specific purpose more than a certain percentage of the time each day.
- *Time Utilization Criterion (Random Use)*: This criterion applies to vehicles with random use such as those in the motor pool. We computed the required number of vehicles given average use data and different constraints on the probability that a vehicle will be available when one is needed. The results of those computations are shown in Appendix C.
- *Economic Analysis Criterion*: This criterion can be used to show that the vehicle or vehicles being used represent the least-cost method of satisfying a given transportation need.
- *No Other Alternative Criterion*: This criterion can be used to certify that no other way is available to meet a particular vehicle need.

We also conclude that NIH must devote more attention to satisfying vehicle needs economically. For example, we believe the Police Branch could use small, nonhighway vehicles such as those manufactured by Cushman or Mitsubishi for issuing parking tickets instead of using four-wheel-drive vehicles for that purpose.

Security of Property and Material

In this section we evaluate the security of the following specific types of items:

- Fuel
- Automotive repair tools and equipment
- Dedicated vehicles
- Motor pool and shuttle vehicles
- Automotive parts
- Surplus equipment being moved.

We discuss the specific measures used to prevent theft and vandalism.

In the first three areas, we found current procedures to be adequate for the prevention of theft and vandalism. The fuel pumps are kept locked and are operated only by a garage attendant. The attendant keeps a log of fuel usage by vehicle identification number. The repair tools and equipment are assigned to specific

individuals who are responsible for them. Most tools are assigned out permanently to a specific individual and a few are assigned out as needed. The garage itself is kept locked after hours and is accessible only by a few key individuals. There is no special security of dedicated vehicles other than a requirement that they be kept locked. Some are kept parked in locked garages (e.g., grounds maintenance vehicles) and others are kept in open lots. We conclude that in these areas, current control procedures are sufficient.

In evaluating the security of the motor pool and shuttle vehicles we noted that the areas in which those vehicles are parked at night is not fenced. The vehicles are locked at night but not kept in a secure area. We visited other Government agencies and found that they had secure, fenced areas to house their fleets of motor pool and shuttle vehicles. The absence of a fenced-in area for parking large groups of vehicles, such as the motor pool and shuttle vehicles, at night invites theft and vandalism. Although the vehicles are kept locked, knowledge on the part of a would-be thief that those vehicles are not watched at night may provide them with an opportunity that could have been prevented. NIH needs to ensure that these vehicles are secure at night either through use of a fence or through adequate night patrolling by the security force.

We examined the security of automotive parts in the NIH garage and found that personnel there have no auditable system to track and control perpetual balances on hand. The parts control clerk in the garage uses word-processing software (WordPerfect) to record quantities of parts on hand and to record reorder levels for those parts, but that system only provides a record of the balance on hand and the policies to be used to order more. It cannot track or audit items received or items consumed. Also, it cannot track cost and assign repair parts costs directly to a repair order. The parts used by the garage are common-use parts with high consumer appeal. The current controls make it possible for someone to pilfer those parts without being detected. We conclude that receipts and issues cannot be controlled adequately without an automated system that tracks transactions as they occur. The use of word-processing software is not sufficient to control the parts inventory. A better system is needed.

In evaluating the movement of surplus equipment about the NIH campus we observed that the custodians releasing surplus property have no incentive to track the property since it is of no value to them and they are not receiving anything in

return. The current procedure requires signature acknowledgement by the sender and transporter (transfer document) that an item was picked up, and by the receiver that the equipment was received. However, the signed copy of the transfer document is not always kept by the sender. Consequently, without a signed copy of the transfer document, NIH cannot maintain an audit trail. We conclude that an opportunity exists for a transportation service employee or contractor to pilfer surplus property in cases in which the sending custodian does not keep a copy of the transfer document that has been signed by the transportation service employee. NIH would have a difficult time tracking the loss of such property.

Proper Use of Government Property

In this section, we evaluate three specific opportunities for misusing Government property:

- Use of the garage facility
- Use of the shuttle bus service
- Use of Government vehicles.

We did not find any potential for misuse of the garage facility. It is locked after hours and only three employees have keys. Personal use of the garage facility is not allowed at any time. We conclude that the control of garage facility use is sufficient to prevent misuse.

Insofar as the shuttle bus service is concerned, we found it susceptible to abuse either by non-NIH employees using it or by NIH employees using it for non-Government purposes. Anyone can ride the NIH shuttle buses for any purpose. On off-campus routes, riders are asked to sign in, but the drivers do not ask for NIH identification. If the drivers do not make identification checks periodically on noncampus shuttle routes, NIH has no assurance that the transportation services are restricted to NIH use. We believe a verification system is needed for shuttle users.

With regard to use of Government vehicles, we found some room for improvements. The local control of vehicles and their use differs significantly among the various groups at NIH that use vehicles. Guidelines about what constitutes proper and improper use of Government vehicles are abundant in the FPMR and *DHHS LMM*, but they are not well known in the NIH community because they are not generally communicated to employees who use the vehicles. The *DHHS LMM*

specifically requires that these guidelines be communicated to vehicle users.[5] Figure 2-1 is a suggested set of instructions that could be issued to vehicle users at NIH.[6] We conclude that NIH needs to issue a complete set of instructions, such as those presented in Figure 2-1, to all users of NIH vehicles.

Maintenance and Repair

We investigated the following four specific maintenance and repair, opportunities for abuse of Government vehicles or the funds that are needed to maintain them:

- Billing for repairs provided by the NIH garage
- Billing for contractor repairs
- Preventive maintenance schedule
- Vehicle damage.

We did not find substantial opportunities for abuse in any of those categories and conclude that no improvements are required to existing procedures.

In billing for repairs provided by the NIH garage, garage employees use the *Mitchell Mechanical Labor Estimating Guide* (1991 edition) to determine the allowable number of hours for a job. They never charge more than the number of allowed hours, but they may charge fewer if the job took less time to complete. They manually record labor hours and parts consumed on a vehicle repair order. Prices actually charged for parts do not exceed 10 percent more than the price paid to the vendor for those parts.

In billing for contractor-provided repairs, the garage staff checks to make sure that the repairs were actually completed and charges are consistent with vendor estimates provided prior to repair. The cost of the outside materials and labor is filled in on a vehicle repair order and charged back to the NIH customer in the same way that in-house repair charges are handled.

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[5]*DHHS LMM* section 103-38.300-59.

[6]The Transportation Branch has developed a "Fact Sheet" explaining proper use of Government vehicles, but it is not distributing that fact sheet. The fact sheet does not contain all of the instructions we present in Figure 2-1. Also, the Transportation Branch is in the process of putting proper use instructions on the back of motor pool trip tickets and will do so when new ones are printed.

INSTRUCTIONS TO OPERATORS OF NIH GOVERNMENT VEHICLES

- You must hold a valid state driver's license for the vehicle you are using.
- You may not use Government vehicles for transportation between your home and place of work.
- You are responsible for the care, operation, maintenance, and protection of Government vehicles while they are assigned to you.
- You must obey motor vehicle traffic laws and pay fines resulting from violation of those laws while using Government vehicles.
- If you use a Government vehicle for other than official business, you will be subject to a suspension of at least 1 month and may be terminated.
- You are not allowed to transport nonofficial passengers in a Government vehicle.
- You may obtain fuel on campus at the fuel pump located in front of Building 12 (garage).
- Your use of the Government credit card in a Government vehicle is limited to purchases of fuel, oil, and services required to keep the vehicle in proper operating condition. You must collect and turn in receipts for those purchases when you return the vehicle.
- You must fill in a dedicated vehicle mileage log or a motor pool trip ticket when using an NIH vehicle.
- You must report all accidents using Standard Forms (SFs) 91 and 94, which are provided in the vehicle. Guidance for accident reporting can be obtained from the NIH Motor Pool Office by calling (301) 496-3426.
- You must use unleaded gasoline in all vehicles designed to operate on such fuel. If obtaining fuel from a commercial station, you should use a self-service pump.
- You may not smoke in an NIH Government vehicle.
- You should use Government vehicle parking spaces when they are available.
- You must always keep the vehicle locked when it is not in use.
- You must always use seat belts and shoulder harnesses when operating an NIH Government vehicle.

FIG. 2-1. SUGGESTED VEHICLE OPERATOR INSTRUCTIONS

In evaluating preventive maintenance, our main concern was to determine whether it was being performed. Preventive maintenance is performed at least every 3 months on all vehicles. A computer data base is kept and used for tracking and scheduling that activity.

In the repair of damaged vehicles, operators are responsible for reporting that damage (part of proper use of Government vehicles) on SFs 91 and 94, which are kept in all vehicles. In the case of the motor pool, employees instruct any operators who have accidents to fill out those forms. One copy goes to the Crime Prevention Branch, one to the garage, and one to the motor pool. No procedures have been established for inspecting vehicles that are returned to the motor pool; however, the motor pool trip ticket turned in by the vehicle user requires that user to state whether the vehicle was involved in an accident. Vehicle damage is handled by the garage like any other repair. Some dedicated vehicle users may not be aware of accident or other vehicle use procedures as we suggested in the "Oversight Responsibility" section (p. 2-4); however, the procedures are adequate.

RECOMMENDATIONS

We do not believe transportation services at NIH have any significant problems with waste, loss, unauthorized use, or misappropriation; however; we recommend some actions that will improve control and eliminate the opportunity for future abuses. Our recommendations center around ensuring that the Transportation Branch act as an oversight function for all of NIH and in appointing and using local fleet managers in key groups to which vehicles are assigned. They also address key areas in which added control is appropriate.

Our first recommendation is that *the Transportation Branch Chief should publish procedures in each of the 16 specific functions cited earlier in this chapter (p. 2-3).* The intention is to clearly establish those procedures and to use them for educational purposes. The abundance of laws, regulations, and policies within the FPMR and *DHHS LMM* make the oversight job a difficult one. The job is further complicated by the opportunities for waste and abuse that are not addressed directly by existing laws, regulations, and policies. The checklist in Appendix A provides a consolidated listing of those items required by the FPMR and *DHHS LMM* as well as additional items we have added as a result of our analysis. If the checklist is used

periodically to ensure that control is being maintained, the Transportation Branch Chief will be able to execute his/her oversight responsibilities better.

We have divided our remaining recommendations by each critical area. We make no recommendations in the repair and maintenance area since we concluded that procedures in that area were sufficient to maintain control.

We recommend the following actions to improve oversight responsibility:

- *The Associate Director for Administration or his/her designee should formally appoint local fleet managers.* Those fleet managers should be responsible for all vehicles dedicated to their group. We suggest that at least six fleet managers be appointed, one for each of the following activities: the Division of Security, the Division of Safety, the Division of Space and Facilities Management, the Division of Engineering Services, the National Center for Research Resources, and the Transportation Branch. We further suggest that the Associate Director for Administration appoint a local fleet manager for FCRF; that individual could be either a contract employee or a Government employee in the contracting office at the National Cancer Institute. The local fleet managers would function much as property control officers do. They may even be the same individuals.

- *The Transportation Branch Chief should provide oversight to the local fleet managers.* The Transportation Branch Chief should be responsible for annual training of the local fleet managers. That training would encompass proper use of Government vehicles, justification and utilization, and procedures for using vehicles at NIH. It should be supplemented by periodic checks to ensure that policy and procedures are followed within the ICDs.

In determining vehicle requirements, we recommend that the Associate Director for Administration take the following actions:

- *Modify the policy requiring annual justification for vehicles by the vehicle user's administrative officer.* The new policy should be more specific than the DHHS policy and should require using one of five possible criteria:

  - Mileage Use Criterion
  - Time Utilization Criterion – Fixed Use
  - Time Utilization Criterion – Random Use
  - Economic Analysis Criterion
  - No Other Alternative Criterion.

The justification should be submitted in writing annually by the end of the fiscal year. It should contain a signed statement by the administrative officer certifying that the information provided is correct and that the most cost-efficient vehicles are being used for the stated purposes. Appendix D contains descriptions of each justification and sample forms that can be used to submit them.

- *Adopt a policy that each vehicle request (new or replacement) must contain a signed statement by the requesting official that the vehicle requested is to be used for the stated purpose.* This procedure would prevent situations in which a vehicle is requested for one purpose and intentionally used for another, which could be satisfied more economically with other equipment.

To ensure the security of property and material, we recommend that NIH take the following actions:

- *The Director, Division of Logistics should erect a fence or provide some other security measure to limit night access to parking areas to motor pool and shuttle vehicles.* The intention would be to make it extremely difficult for potential thieves or vandals to gain access to the vehicles.

- *The Transportation Branch Chief should use inventory control software to track automotive parts.* That software should keep a transaction log so that receipts could be tracked against actual invoice paperwork if necessary and so that issues can be tracked against actual charges to the dedicated vehicle owner. This system might be tied directly to the financial system to eliminate costly manual data entry of invoice information and billing information to ICDs.

- *The Director, Division of Logistics should implement a policy that in surplus property moves would require the sending custodian to keep a copy of the transfer document signed by the contract or in-house employee who moves that property.* That procedure will provide a more auditable trail should property become lost in the cycle of moving it from a custodian to the surplus warehouse in Building 13 on the Bethesda campus.

Finally, to assure the proper use of Government property, we recommend that the Transportation Branch Chief take the following actions:

- *Direct bus drivers to check periodically for NIH identification of persons riding off-campus buses.* Periodic checks will help prevent use of the shuttle service by non-NIH employees. If periodic checks show frequent abuse, then the Transportation Branch Chief should direct the bus drivers to check for NIH identification on a continual basis.

- *The Transportation Branch Chief should write and distribute a concise statement of what constitutes proper use of a Government vehicle.* That

statement should be placed on the motor pool trip ticket and on a standard trip log sheet that can be used by dedicated vehicle owners. All vehicle users should be made aware of that policy. We suggest using an instruction sheet for vehicle users similar to the one in Figure 2-1.

Adopting these recommendations should ensure that proper internal controls are in place and do it with minimal administrative cost.

CHAPTER 3

CONTRACTING ANALYSIS

INTRODUCTION

NIH is interested in identifying opportunities in which services can be provided by a contractor for the same or lower cost should it become necessary to allocate its FTE employees to research rather than to services. We examined the motor pool, shuttle, garage, and transfer services to identify the best opportunities for contracting. In doing so, we studied cost issues, availability of services, and ability of contractors to supply those services effectively.

Our results in this area are founded on knowledge gained from cost analysis of current operations, interviews with possible transportation service providers, and interviews with providers of transportation services at similar Government institutions. We met with transportation managers at NASA, Andrews Air Force Base and the University of Maryland.

FINDINGS AND CONCLUSIONS

Each of the four areas we investigated – motor pool, shuttle buses, maintenance and repair, and transfer services – requires one or all of the following resources: labor, vehicles, management, and facilities. We investigated various in-house and contractor-provided mixes of those resources for each functional area. In this section, we first present some general findings for the Transportation Branch as a whole and then specific findings in each of the four areas.

In general, labor costs less per hour to potential contractors than to NIH. Table 3-1 compares the hourly rates (without benefits) of different types of labor at NIH in each of the functional areas with median Washington, D.C., area rates supplied by the Bureau of Labor Statistics. With the exception of the employees who service the vehicles, labor can be found for lower wages than NIH is currently paying its employees. The numbers shown in the table are median numbers since the data on which they are based vary widely.

TABLE 3-1

COMPARISON OF NIH LABOR RATES TO LOCAL-AREA LABOR RATES

Functional area	Job content	Median NIH hourly rate[a]	Median Washington, D.C. area hourly rate[b]
Motor pool	Motor vehicle operator	13.20	9.20
Shuttle service	Bus driver	13.20	9.20
Vehicle maintenance	Routine service mechanic	13.83	14.77
	Semiskilled mechanic	10.21	8.02
Transfer services	Truck driver	13.98	11.24
	Handler	13.98	6.75

[a]NIH data supplied by Division of Logistics in July 1992

[b]Washington, D.C., area data supplied by the U.S. Department of Labor from a survey conducted in February 1992 that included 433 establishments and 482,000 employees

The cost of motor vehicles varies, depending upon their source. NIH has only three possible sources for its motor vehicles. The FPMR requires that GSA be the mandatory source of supply for vehicles; however, GSA has both purchase and lease programs for Federal agencies. NIH currently buys vehicles through GSA's Automotive Commodity Center. GSA also has a Fleet Management Division, which supplies vehicles under two different leasing arrangements. The first arrangement, called the Inter-Agency Fleet Management System (IFMS) program, is one in which all agency vehicles are leased from GSA under a memorandum of understanding with GSA. The costs of the vehicle leases are structured so that there is a fixed charge per month and a mileage charge per month. Those costs include all maintenance. GSA officials indicated to us that they are not currently adding new customers to this program but that they expect to do so in the very near future.

The second lease option available from GSA is a "dry rate" lease. The dry rate is one for which GSA sets a fixed monthly charge that does not include any maintenance; the vehicle user signs a 3-year lease agreement and is responsible for all maintenance. We found that the dry rate lease program is highly restrictive because under it, GSA supplies sedans only and for a period of 3 years only. The rates for those vehicles do not provide any cost advantages or disadvantages for NIH. (We

discuss the IFMS option in detail subsequently in the section on maintenance and repair.)

We found some hidden advantages and disadvantages in the contracting of transportation services. Some providers of transportation services supply their own vehicles and maintain those vehicles themselves. That means, for example, that by contracting out the shuttle services, NIH would eliminate not only the labor associated with that service but also the maintenance workload required for that service.[1] On the other hand, contracted services require extra Government management because one or more persons must oversee the contract. Government users of contract services we spoke with indicated that specific, yet simple, measures upon which the contractor will be monitored must be identified in advance. They also indicated that they needed to dedicate additional management personnel to monitor the performance of the contractor providing the services.

Motor Pool Services

We identified two alternatives to the current in-house motor pool operation. The first is to have a contractor run the entire operation (labor, management, and vehicles). The most likely type of contractor to do this would be a car rental company. We talked with a representative of the Hertz Corporation and found little interest on their part in running a motor pool operation for NIH because of its low usage rates.

We then talked with a representative from Enterprise Corporation in Bethesda, who was willing to deliver, at no additional cost, sedans, pickup trucks, minivans, and 4 x 4 vehicles to a central location on the NIH campus. The rates that Enterprise charges are shown in Table 3-2. Those rates include unlimited mileage and require the customer to provide gasoline or pay an additional $5.00. The total cost and average cost per use of each vehicle for both Enterprise and NIH are also provided in Table 3-2.

As Table 3-2 indicates, the total annual cost of using Enterprise vehicles is approximately $30,000 more than using NIH-owned vehicles. However, because of their low usage rate, the cost to rent minivans, 4 x 4 vehicles and pickup trucks from

[1]Contracting out all the Transportation Branch functions would reduce the fleet size from 235 vehicles to 151 vehicles. NIH would still need either in-house-provided or contractor-provided maintenance and repair services for those remaining vehicles.

Enterprise Corporation is significantly lower than the cost for NIH to own and operate those vehicles.

TABLE 3-2

COMPARISON OF NIH VEHICLE COSTS TO ENTERPRISE RENTAL AGENCY RATES

(Dollars)

Vehicles	Enterprise			NIH	
	Daily rate	Total annual cost[a]	Average cost per use[b]	Total annual cost[a]	Average cost per use[b]
Sedans	27	67,944	29.54	48,672	21.16
Station wagons	45	41,082	46.95	19,132	21.86
Minivans	45	9,317	62.11	21,461	143.07
Carryalls	45	32,423	48.03	21,813	32.32
Utility 4 x 4	35	13,889	39.68	17,451	49.86
Pickups	35	2,009	40.19	7,637	152.75
Total all vehicles		166,664	37.88	136,165	30.95

[a]Includes maintenance costs, vehicle cost, gas and oil based on average miles driven per year, and the allocated salary and benefits of a dispatcher for the number of each vehicle that are currently owned by NIH.

[b]Use is calculated as a mean number of vehicles per day based on the number of days per year that each vehicle is used.

The second option is for employees to use their privately owned vehicles (POVs) with reimbursement from NIH. The motor pool sedans generate $64,512 in annual revenue from users. If those vehicle needs were met with POVs, the cost to NIH would be $43,830 annually.[2] Some motor pool users mentioned to us that they find it much easier to obtain parking with a Government vehicle because of the availability of parking spaces and that if they use a POV they will not be able to find a parking space upon their return to the NIH campus. Also, some motor pool users neither have nor are required to have POVs as part of their jobs. We found that using POVs was more economical but less effective than using motor pool vehicles.

[2]The calculation is based on 12 motor pool sedans each averaging 14,610 miles per year. Each sedan is used an average 192 days a year at a rental cost of $28 to the vehicle user. Current Government mileage reimbursement rate for POVs is $0.25 per mile. The actual cost to NIH of providing those vehicles is $48,672 per year because those vehicles cost NIH $21.16 per day used.

In our investigation, we noted that the motor pool spends a significant number of hours (18 per day in FY92) providing special messenger service to the NIH community. That service is completely unrelated to normal motor pool business and would still need to be provided if the motor pool operation were to be performed by a contractor or if POVs were used for employee transportation.

We conclude that the motor pool operation offers minimal opportunity for the cost-effective contracting of services in the Transportation Branch. Only a small amount of Transportation Branch manpower is dedicated to this activity so the labor savings would be small if it were to be provided by a contractor. Some potential exists for private contractors to provide vehicles and management of those vehicles in this area, especially for minivans, 4 x 4 vehicles, and pickup trucks. The use of POVs is economical but is not practical because of the parking problems and the fact that not all employees who need a vehicle have a POV that can meet their business needs.

Maintenance and Repair Services

We examined two alternatives to the current garage operation for maintaining and repairing motor vehicles at NIH. The first option was the use of local repair shops to perform the maintenance. The garage charges their maintenance and repair time at $42 per hour. We called five local area garages and found that their hourly rates varied from $53 to $60. The NIH garage repair hourly rates are reasonable when compared to other organizations.

On the surface, the in-house garage operation appears to be more economical than service provided by local repair shops. We examined the garage workload in comparison to the labor costs for the operation to determine whether the $42 per hour rate truly reflected actual repair cost. We found that the garage workload, as measured by actual hours charged (straight time and overtime) has decreased dramatically over the past few years. Figure 3-1 shows average workload in hours charged from FY90 through FY93. Using the current salary and benefits paid to garage employees and the FY92 actual hours charged, we calculate that the garage is currently costing $86 per hour.[3] We consulted with the garage mechanics and found that the maximum number of hours they charge is dictated by the *Mitchell Mechanical Labor Estimating Guide* (1991 edition). In some cases they charge less

[3]Calculation uses median garage employee salary of $24,137 for 8 employees with 30 percent benefits and 2,913 straight time hours charged to customers for FY92.

time for a repair than specified in the *Guide*. Private industry uses similarly published standards in conjunction with their labor rates to determine their charges but they do not charge less money if the repair takes less time. The apparent recent decrease in garage workload has caused the garage labor rates to be far more expensive at present staffing levels. We could not find any cause for the decreased workload and suspect that only the hours billed have actually decreased, not the actual hours of work. We were not able to determine whether more hours would have been charged by an outside contractor for the same work done by NIH employees.

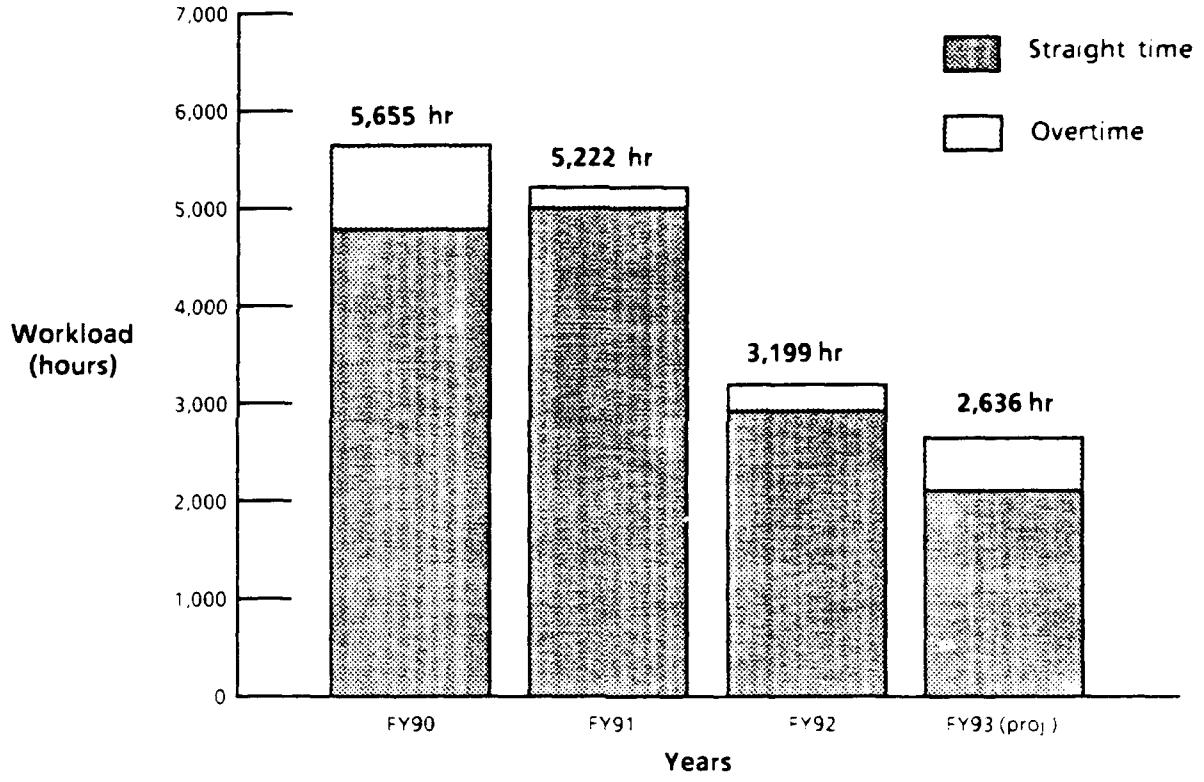

FIG. 3-1. ANNUAL GARAGE WORKLOAD

(Labor Hours Charged)

The second alternative to in-house maintenance and repair of NIH vehicles is to lease vehicles from GSA under its IFMS program. GSA's IFMS leased vehicle rates include the cost of maintenance at GSA-specified local vendors. We obtained life-cycle data on a stratified sample of NIH vehicles and constructed cost models for both NIH-owned and GSA-owned vehicles. We then applied those cost models to the entire

NIH fleet. Table 3-3 shows the results of that analysis. Appendix E shows the resultant components of the cost model for both NIH and GSA vehicles in each vehicle stratification. NIH equivalent monthly costs are as much as 20 percent lower for sedans, stations wagons, minivans, and pickup trucks and as much as 42 percent higher for medium and heavy trucks. In total, we found that NIH could save $120,000 per year in depreciation and maintenance costs by using the GSA lease program for all vehicles. If the GSA lease program were used for the medium and heavy vehicles only, the annual savings would be $144,000.

TABLE 3-3

COST MODEL RESULTS

Stratification	Number of vehicles	Total GSA annual cost ($)	Total NIH annual cost ($)	Annual savings from GSA ($)	Percent savings (%)
Police sedans	10	42,396	39,660	- 2,736	- 7
Sedans	34	105,504	100,212	- 5,292	- 5
Station wagons	28	88,068	80,364	- 7,704	- 10
Minivans	15	45,708	38,016	- 7,692	- 20
Utility/carryall	21	62,808	70,116	7,308	10
Passenger vans	17	69,324	93,996	24,672	26
Buses	9	67,836	84,516	16,680	20
Ambulances	3	18,528	31,932	13,404	42
Dump trucks	7	25,488	35,460	9,972	28
Delivery vehicles	8	31,704	45,420	13,716	30
Work vans	29	133,656	191,508	57,852	30
Pickup trucks	43	131,856	129,132	- 2,724	-
Other	11	N/A	N/A	N/A	N/A
Total	235	822,876	940,332	117,456	12

We talked to a number of users of dedicated vehicles, however, and found that they are sensitive to the amount of time a vehicle spends in the garage and to the amount of effort needed to get that vehicle to the garage. Those users indicated they

are seriously inconvenienced when a vehicle is not available to them and that they do not want to be spending time taking a vehicle to an off-campus site for repair.

We also talked with a GSA local fleet manager to understand how maintenance is performed under the GSA program. Under that program, the vehicle user is referred to a local garage by the GSA fleet manager. GSA does not negotiate special rates for repairing vehicles with selected vendors but will use any vendor that has "reasonable" charges for services. Although GSA does not use many vendors in close proximity to the NIH campus, it is quite willing to use nearby vendors should NIH vehicles be supplied by the IFMS program. Still, under GSA's program, vehicle users (or the NIH Transportation Branch) will have to take vehicles to repair facilities.

We conclude that the repair and maintenance function offers minimal opportunity for more economic contracting of services in the Transportation Branch. Nearby garages are available for vehicle repairs and maintenance at a lower hourly labor rate than that at NIH, primarily because of the dramatic decrease in the current garage workload. NIH has an opportunity for cost savings if it uses leased vehicles from GSA with GSA-provided maintenance. While NIH has not been economical in maintaining and repairing larger vehicles, it has been in servicing small vehicles. Based on the current GSA rates, GSA is able to offer medium and heavy trucks at lower cost than if NIH owned those trucks and performed its maintenance in-house. On the other hand, NIH ownership and maintenance of sedans, station wagons, minivans, and pickup trucks has been less expensive than leasing those vehicles from GSA with GSA-provided maintenance. If the current garage costs at NIH stay high, the GSA rates will become favorable for all vehicles.

Maintenance supplied by GSA is preferable to maintenance provided directly by local repair shops because GSA handles all billing and contract functions. In general, contractual arrangements with vendors require oversight and continual management attention to ensure that Government needs are being met. In the case of GSA-provided vehicles, that service is provided by GSA, so there is no added cost to NIH.

Although users of dedicated vehicles indicated to us that not having an in-house garage presented a serious inconvenience, we believe that, as part of its service, the Transportation Branch could organize some scheduling and vehicle transportation to local garages for vehicles when maintenance is not provided in-house. That service

would add a negligible cost to the option of using a local garage; however, consideration is currently being given to relocating the NIH facility off campus. In that case, the added cost would be offset. In either case, GSA-leased medium and heavy vehicles would cost less. We also believe that as contractors increasingly provide functions requiring heavy vehicles (e.g. landscape maintenance), the needs of the NIH community for servicing of medium and heavy trucks will decrease and the in-house skill in performing that service will also diminish.

The use of GSA-leased vehicles makes sense in the case of buses, vans, trucks, and other heavy vehicles because NIH can take advantage of GSA-negotiated maintenance agreements. The use of GSA-leased vehicles does not make sense in the case of sedans, station wagons, minivans, pickup trucks, and other "easy-to-service" vehicles if NIH can reduce the current garage staffing or charge customers for the actual number of hours spent on maintenance.

Shuttle Bus Services

The use of contractors for shuttle bus service has the potential to significantly reduce labor. Between a third and a half of the current 46 FTE employees in the *Transportation Branch* are allocated to the shuttle bus operation. Table 3-4 shows the official breakdown of FTEs along with average salary levels in each functional area. The exact number of employees in the shuttle operations is unclear because the shuttle and motor pool operations share and rotate employees. Most of the workload within the two services appears to be in the shuttle bus function.

The NIH has awarded a contract to the Small Business Administration for an 8(a) minority firm to provide shuttle bus service for the Executive Plaza (EP) route. We compared the contracted cost of the EP shuttle to the cost of providing that service with in-house vehicles and labor. We used the results of our vehicle cost model to estimate the equivalent monthly cost of buses and labor for running the EP shuttle. We also computed the equivalent monthly cost of buses and labor using GSA leased buses and NIH labor. Table 3-5 shows a comparison of the costs of running the EP shuttle in-house with NIH buses and with GSA-leased buses to the current contract costs for that shuttle service. The cost of the EP shuttle at current contractor rates is $100,000 per year more than the equivalent service provided totally by NIH and $116,000 a year more than the equivalent service provided by NIH labor with GSA-leased vehicles.

TABLE 3-4

NIH TRANSPORTATION BRANCH
EMPLOYEE DISTRIBUTION AND AVERAGE SALARIES

Section	FTE	Average annual salary ($)
Office of the Chief	5	37,151
Motor Pool Section	8	26,103
Shuttle Section	15	27,093
Garage Section	8	24,137
Transfer Section	10	29,721
Total all sections	46	28,071

TABLE 3-5

EXECUTIVE PLAZA SHUTTLE SERVICE COST COMPARISON

(Annual Costs)

Cost component	Current contractor labor and buses ($)	NIH labor, NIH-owned buses ($)	NIH labor, GSA-leased buses ($)
Labor	N/A	151,351	151,351
Buses	N/A	97,159	81,079
Total	348,831	248,510	232,430

Notes: NIH labor was costed at $13 20 per hour plus 30 percent benefits, a total of 35 hours per day, and 21 days per month. NIH buses were costed at $1,264 per bus per year (from cost model) for 5 buses plus operating expenses of $0.20 per mile for 423 miles per day for 21 days per month. GSA buses were costed at $375 per bus plus $0.35 per mile for 5 buses operating a total of 423 miles per day for 21 days per month. Bus operating costs were calculated at $0.20 per mile for 423 miles per day for 21 days per month. Contractor rates used are $39 55 per hour (average) for a total of 35 operating hours per day.

To evaluate the contract cost of the EP shuttle bus service and compare it with the cost of using a fully competitive firm, we surveyed several Government agencies that have awarded contracts for shuttle bus service in the Washington, D.C., area. For the comparison, we converted all contract costs to an average cost per operating hour. The average cost per operating hour for the EP shuttle is $39.55. We identified three Government agencies with contracts for shuttle bus service performed by 8(a) firms. The average cost per operating hour for two of those contracts is approximately equal to the cost of the EP shuttle. The cost per hour for the third contract was about 36 percent less; however, the vehicle used to perform that contract is a 15-passenger van rather than a 21-passenger bus which is the vehicle used to perform the other 8(a) contracts. Therefore, we believe that the contract cost of the EP shuttle bus service is reasonable for 8(a) contracts. We also identified two Government agencies with contracts for shuttle bus service performed by fully competitive firms. The average cost per operating hour for those contracts is approximately 30 percent less than the operating costs for the 8(a) contracts and roughly equivalent to the cost of using NIH labor with either NIH-owned or GSA-leased buses.

We conclude that the shuttle bus function provides significant opportunities for contracting services in the Transportation Branch. The shuttle service function draws from a pool of 23 FTEs, 13 of whom would not be required if the entire function were provided by a contractor. By not using NIH vehicles for the shuttle bus function, the workload of the garage can also be reduced. NIH could use a fully competitive contractor for approximately the same cost as using NIH labor with NIH-owned buses or an 8(a) contractor for an approximately 30 percent higher cost.

Transfer Services

The most labor-intensive function within the Transportation Branch is the transfer services operation. Currently, 10 NIH FTEs and as many as 50 contract FTEs are assigned to this function each day. With the exception of the EP shuttle bus route, this service is the only one within the branch that is performed under contract (with multiple contractors).

We compared the cost of the current contract operations in the transfer services function to the cost of providing an equivalent service in two different ways: NIH-supplied labor with NIH-owned vehicles and NIH-supplied labor with

GSA-leased vehicles. We found some significant differences; Table 3-6 shows the results of that analysis. While the current contract labor cost is slightly lower than the NIH labor cost, the current contract vehicle costs are considerably higher than both the NIH vehicle costs and the GSA-leased vehicle costs. In total, the current contractor operation is $245,000 more expensive per year than the equivalent service provided with NIH labor and vehicles, and $259,000 more expensive than the equivalent service provided with NIH labor and GSA-leased vehicles. We also noted that under current contract arrangements, a job that takes less than 1 hour on the part of the contractor is paid at the rate of 1 hour. Thus, the actual amount paid to a contractor per hour of actual work may be more than their hourly rate.

TABLE 3-6

MOVING SERVICES COST COMPARISON

(Annual costs)

Cost component	Current contractors ($)	NIH labor with NIH vehicles ($)	NIH labor with GSA vehicles ($)
Labor	1,200,000	1,363,050	1,363,050
Vehicles	635,250	227,040	213,600
Total	1,835,250	1,590,090	1,576,650

Notes on calculations: Current contract labor costs are calculated at $16 per hour (average rate) for 75,000 hours per year. Current contract vehicle costs are calculated at $16.94 per hour (average rate) for 37,500 hours per year. NIH labor cost is calculated at $13.98 per hour plus 30 percent benefits for 75,000 hours. NIH vehicle costs are calculated at $746 per month (from the cost model) for 20 vehicles with operating expenses of $0.20 per mile for 12,000 miles per year. GSA vehicle costs are calculated at $340 per month plus $0.35 per mile for 20 vehicle operating 12,000 miles per year. Vehicle operating expenses calculated at $0.20 per mile for 12,000 miles per vehicle per year.

We were informed that GSA is currently negotiating a contract for NIH that would provide for contract labor, vehicles, and management of the transfer services function at an hourly rate that is approximately 40 percent less than the average hourly rate NIH is now paying contractors to perform that function. We were also informed that the GSA contract would contain provisions for the contractor to accommodate peak workloads.

We conclude that a GSA-negotiated contract to perform the transfer services function (including transfer services) represents the least-cost alternative and

requires the least number of NIH employees. This option will reduce the current requirement for NIH labor by 8 FTEs.

RECOMMENDATIONS

We recommend that the Director, Division of Logistics, pursue the following strategy for performing Transportation Branch services:

- *Use a GSA-negotiated contract, in lieu of current contracting arrangements, to satisfy the labor, vehicle, and management requirements of the transfer services function.* Ensure that the cost of the contract is less than the cost of using GSA vehicles and NIH labor at the rates identified in Table 3-7. Additionally ensure that the contract contains provisions for accommodating peak load periods.

TABLE 3-7

BREAK-EVEN RATES FOR CONTRACT AWARDS

Contracted vehicle/service	Break-even rate
GSA 20-passenger bus	$375 per month plus $0.35 per mile
GSA 23,999-GVWR van truck	$340 per month plus $0.355 per mile
NIH bus drivers	$13.20 per hour plus 30 percent benefits
NIH truck drivers	$13.98 per hour plus 30 percent benefits
NIH handlers	$13.98 per hour plus 30 percent benefits

Note: GVWR = gross vehicle weight rating.

- *Use contracts, awarded through full-and-open competition, for the management, bus drivers, and vehicles to accommodate shuttle bus service requirements if the cost of the contract is less than the cost of using GSA vehicles and NIH labor at the rates identified in Table 3-7.* For each shuttle bus route, use 15-passenger vans as a lower cost alternative if they accommodate shuttle service requirements. If shuttle service contracts must be awarded as 8(a) set-asides, do not award contracts unless their cost is less than the cost of using GSA vehicles and NIH labor at the rates identified in Table 3-7.

- *If GSA will accept new customers into its IFMS program, use GSA-leased medium and heavy trucks to accommodate requirements for those vehicles* (includes ambulances, delivery vans, dump trucks, and other specialty vehicles available through GSA). Ensure that GSA reimburses NIH for the market value of vehicles being turned in to GSA.

- *Consider the use of a car rental agency, such as Enterprise, to provide sedans, light trucks, and passenger vans currently provided by the NIH Motor Pool.* While it is possible to arrange for a rental agency to deliver needed vehicles to a central location at NIH, the cost of the option is slightly higher than using NIH vehicles (approximately $30,000 per year). Use a car rental agency only for vehicles for which the rental cost is less (i.e., minivans, 4 x 4 vehicles, and pickup trucks) or if the additional cost of contracting the entire motor pool operation can be justified by an associated reduction in the required NIH labor.

- *Of the vehicles for which NIH retains ownership, continue to maintain sedans, station wagons, minivans, and pickup trucks at the NIH auto maintenance facility using NIH labor.* Hours charged to work performed should be monitored to ensure they conform to published standards.

In addition to those specific recommendations, we offer the following general suggestions:

- When contracting for transportation services, it is generally most cost-efficient to contract for as many of the resources needed as possible. Contractors who provide both the vehicles and the labor to perform a particular function should also provide management and required facilities. Even if contractors provide labor but not vehicles, NIH should attempt to include any required management and facilities resources in the contract.

- NIH should ensure that contracts do not cost more than performing the services with in-house labor and GSA-leased or NIH-owned vehicles unless those contracts can be justified on some basis other than cost. Table 3-7 provides break-even rates that NIH should use for evaluating the reasonableness of contract-provided labor and vehicles to accommodate the shuttle bus and transfer services functions.

- The use of contractor-provided vehicles and services should be subject to the same justification procedures as those vehicles and services provided with in-house resources. If, for example, shuttle bus service is provided by a contractor but that contractor's buses are operating empty or nearly empty all day long, then the requirements for that service should be reevaluated. In contracting for services, NIH should develop a measurement system to record the usage of those services by the NIH population. NIH should monitor that usage to ensure that it is not paying for services that are not needed or used. We do not imply that NIH is currently failing to monitoring usage, only that it needs to be done.

- For contracted functions, NIH should use staffing of one or two persons per function to oversee and manage the use of the contractors in those functions.

Those individuals should place particular emphasis on measuring that contractor's performance with respect to the contract.

Table 3-8 shows that NIH has the opportunity to reduce 23 FTE employees by following our recommendations. The total cost of providing transportation services using our recommended strategy will also be reduced without any loss in effectiveness.

TABLE 3-8

NET REDUCTION IN FTE

Function	FTE reduction opportunity	FTE to administer contract	Net FTE reduction opportunity
Motor pool	0	0	0
Maintenance and repair	3	1	2
Shuttle bus	15	2	13
Transfer services	10	2	8
Total	28	5	23

APPENDIX A

NATIONAL INSTITUTES OF HEALTH
TRANSPORTATION SERVICES
INTERNAL CONTROL CHECKLIST

CONTENTS

CONTENTS (Continued)

NATIONAL INSTITUTES OF HEALTH
TRANSPORTATION SERVICES
INTERNAL CONTROL CHECKLIST

INTRODUCTION

This document is a checklist of items that should be examined during an internal control review of transportation services at National Institutes of Health (NIH). It is divided into three parts: services provided by the Transportation Branch, oversight responsibilities of the Transportation Branch, and vehicle management by the Transportation Branch and by the various activities using vehicles at NIH. Part I focuses on identifying possible opportunities for waste, loss, unauthorized use, and misappropriation as directed by the Federal Managers' Financial Integrity Act (FMFIA). Part II, focuses on ensuring that the appropriate Government laws, policies, and procedures are communicated to persons within the various Institutes, Centers, and Divisions (ICDs) that are responsible for vehicles. Part III, focuses on ensuring that the laws, policies, and procedures promulgated in the Federal Property Management Regulations (FPMR) and the Department of Health and Human Services (DHHS) document, *The DHHS Logistics Management Manual (LMM)*, are followed by the responsible persons. The applicable part of the FPMR, entitled "Motor Equipment Management," can be found in the Code of Federal Regulations (CFR), Title 41, Chapter 101, Subchapter G, Part 101-38. The applicable part of the *DHHS LMM* is Subchapter G, Part 103-38.

PART I: SERVICES PROVIDED BY THE NIH TRANSPORTATION BRANCH

A. MOTOR POOL SECTION

1. Physical security of vehicles

   a. Where are vehicles kept? Physically visit and note observations.

   b. How are vehicles maintained (e.g., locked, etc.) in storage area?

   c. Is access to the vehicles limited?

2. Wear and tear on vehicles. Inspect for unwarranted wear.

   What controls are in place to detect unwarranted vehicle wear and tear?

3. Misuse

   What is in place to either detect or prevent misuse?

4. Contractor use of vehicles

   a. How does the motor pool contractor make use of its vehicles?

   b. What programs do contractors have in place to detect and/or discipline employees for misuse?

   c. What authority do contractors have to use NIH vehicles?

5. Home-to-work rules

   Who is authorized to take vehicles home? What justification is provided?

6. Unissued license tags

   a. What are the physical security and control procedures?

   b. How does NIH handle "retired" tags?

7. Rental vehicles and dedicated vehicle charges

   a. How are rates calculated for daily – use vehicles and for dedicated vehicles?

b. What are the procedures for ensuring that proper charges are made to the ICD using the vehicle?

8. Maintenance logs

   a. Are maintenance logs available in all vehicles?

   b. Are maintenance logs up-to-date?

9. Mileage logs

   a. Are mileage logs being maintained?

   b. What procedures are in place to ensure that mileage logs are maintained on a daily basis?

   c. If a vehicle is not being used as required (minimum annual mileage), what is done with it?

10. Other logs

   a. What other logs are required?

   b. How are the logs policed?

11. *Government credit cards*

   a. Where are credit cards kept?

   b. How is credit card issuance controlled?

   c. Are instructions issued about how and when to use the credit cards?

   d. How is credit card use recorded in the accounting system?

   e. What procedures are in place to ensure that credit cards are not misused?

B. SHUTTLE SERVICE

1. Usage

   a. How adequate is the shuttle service? How is adequacy measured?

   b. Log books – are drivers making the trips they are required to make?

   c. Are authorized people using the shuttle service?

   d. How do we identify who is authorized to use the shuttle service?

   e. How are shuttle schedules determined?

f. Are workers transported from the parking lots or the Metro stop to their work places? Vice versa?

g. Are, and/or procedures in place to ensure that special request shuttle services are only for official Government purposes?

C. GARAGE OPERATION

1. Physical security

   a. What physical security measures are in place to limit access to the garage space? Who has access?

   b. How is access to garage space controlled?

      (1) During working hours?

      (2) After hours?

2. Tool room security

   a. Who owns the tools?

   b. How is tool issuance controlled?

   c. How is loss/theft/damage handled?

3. Necessary versus unnecessary repairs by commercial garages

   a. How does the NIH determine if unnecessary repairs are performed?

   b. If unnecessary repairs are performed by a garage, how is the problem handled?

4. Verification of repairs

   a. Are repairs verified? How?

   b. Who verifies repairs?

5. Repair costs – reasonable or unreasonable

   a. How are NIH repair rates determined?

   b. What procedures are in place to ensure that the Garage Section is charging its customers a reasonable price for a job?

   c. What procedures are in place to ensure that NIH is paying commercial garages reasonable prices for work done on its vehicles?

6. Parts and supplies

   a. How does NIH prevent pilferage of parts and supplies?

   b. How would losses of parts and supplies be identified, if they were to occur?

   c. How are parts and supplies ordered?

   d. How does NIH determine whether it is paying a fair price for its parts and supplies?

7. Safety/other inspections

   a. How frequently are safety inspections conducted? How frequently are they required?

   b. What other types of inspections are required? How often are they conducted?

8. Repair of personal vehicles

   a. How is use of the garage for unofficial business controlled?

   b. What are the consequences of unofficial use of the NIH garage?

9. Inventory control (for parts, job tickets, etc.)

   a. What inventory control mechanisms are in place?

   b. How are inventories conducted?

   c. When are inventories conducted?

   d. What is the financial value of the financial inventory maintained in the NIH garage?

D. MOVING SERVICES

1. Payment for services NOT rendered

   a. Describe the steps that are followed to identify a job, hire a mover, get the job done, and verify work completion.

   b. What prevents a mover from overcharging the NIH?

2. Loss of equipment being moved (a property/transportation issue)

   Describe the procedures followed when equipment losses are reported as a result of an office move.

3. Damage to equipment being moved

   Describe the procedures undertaken when equipment damage is reported as a result of an office move.

4. Excess property moves

   a. How should property-move paperwork be handled? Some property may find its way into the hallway after a 649 form is drafted. How do we ensure that someone is available to supervise property removal?

   b. Describe the procedures used to coordinate excess property moves with the Personal Property Branch.

   c. Describe the relationship between the Transfer Section and the Personal Property Branch for arranging contractor support.

   d. How does NIH control theft of items that should be turned in the Personal Property Branch?

E. OTHER INFORMATION

1. Licensing arrangements

   a. Describe the procedures for authorizing licensed drivers to use NIH vehicles.

   b. How frequently are checks made on drivers to ensure that licenses remain valid?

   c. How are violators handled?

2. Fuel storage and control

   a. How is the dispensing of gasoline controlled?

   b. Do the gasoline and diesel fuel storage tanks meet Environmental Protection Agency regulations? Are the tanks adequately sized?

PART II: OVERSIGHT RESPONSIBILITY

Part II of the checklist should be used to identify who the applicable fleet managers are, the number of vehicles for which each local fleet manager is responsible, and the training provided to those local fleet managers. You should use checklists similar to those shown below.

A. IDENTIFICATION OF RESPONSIBLE INDIVIDUALS

1. Identify the DHHS Fleet Manager:
2. Identify the NIH Fleet Manager:
3. Identify local fleet managers within each ICD or group within an ICD. Include the name of the group, the name of the responsible individual(s), their telephone number(s) and the number of vehicles for which they are responsible. All NIH vehicles must be accounted for, including those managed by contractors.

Group	Responsible manager	Telephone no.	Vehicles no.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

B. TRAINING OF RESPONSIBLE INDIVIDUALS

1. Please state the name of each local fleet manager, his/her group, and the last date on which they were provided with training in each of the following areas: official use of vehicles, procedures for use, and utilization of vehicle. Information should be based on actual documentation from the training sessions.

Group	Name	Official vehicle use	Vehicle use procedures	Vehicle utilization
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

2. Has the training (indicated above) taken place within the past year?

PART III: VEHICLE MANAGEMENT

A. COMPONENT (NIH) LEVEL RESPONSIBILITIES

1. Replacement and acquisition	Reference
a. Were actual vehicle purchases since the last review limited to the minimum body size, engine size, and optional equipment necessary to meet NIH requirements for those vehicles? Compare vehicle purchases to justifications for those vehicles.	FPMR, 41 CFR 101.38.101-2 (a) DHHS LMM 103.38.104-50
b. Did actual vehicle purchases since the last review meet fleet average fuel economy objectives? Compute fleet average fuel economy by vehicle class for each fiscal year. Also check to ensure that this information was forwarded to the General Services Administration (GSA). If vehicles were purchased by GSA, then omit this question completely.	FPMR, 41 CFR 101.38.101-3 DHHS LMM 103.38.101-52 (a)
c. During the last vehicle acquisition, were requests to acquire sedans and station wagons that were larger than Class II forwarded with justification to the DHHS fleet manager?	DHHS LMM 103.38.101-52 (b)
d. For vehicles not procured by GSA, were written waivers obtained from GSA justifying outside procurement? Was permission also obtained from the DHHS fleet manager?	FPMR, 41 CFR 101.38.104 DHHS LMM 103.38.100-50
e. If more than five vehicles were requested in the last purchase order, were those requests submitted to the DHHS fleet manager by the NIH fleet manager?	DHHS LMM 103.38.100-51 (a)
f. Do all vehicles under manufacturer warranty have GSA Form 1398 (preshipment inspection) affixed to them?	FPMR, 41 CFR 101.38.104-7 (a)
g. Is there an appropriate procedure in place to notify GSA of quality deficiencies during the life of a vehicle? (GSA Form 368 can be used for that purpose.)	FPMR, 41 CFR 101.38.104-7 (b)
h. Are appropriate procedures in place to allow prompt action when motor vehicle defect notices are sent by manufacturers? Do manufacturers have the correct agency address? Have all manufacturers defect notices been addressed?	FPMR, 41 CFR 101.38.104-8 (a)
i. Did vehicles replaced during the review period meet minimum replacement standards? Vehicles wrecked or damaged beyond economical repair are exempt from these standards, but NIH fleet manager must certify that the vehicle is beyond economical repair.	FPMR, 41 CFR 101.38.402 (a) and 41 CFR 101.38.402 (b) DHHS LMM 103.38.402-50
j. Have all vehicles replaced since the last review either been disposed of or been placed in inactive status awaiting disposal?	DHHS LMM 103.38.402-51

2. Identification and registration	Reference
a. Do all vehicles have official U.S. Government tags on front and rear? Allowed exceptions to this rule are listed in FPMR, Title 41 CFR 101.38.204-1 (h). Other exceptions, primarily for law-enforcement purposes, are allowed if authorized by the department fleet manager.	FPMR, 41 CFR 101.38.200 (f) DHHS LMM 103.38.203 and 103.38.204-50
b. Has a list of all vehicles without Government tags been provided to the department fleet manager within the last year? This includes vehicles with allowed exemptions plus vehicles with specially granted exemptions.	FPMR, 41 CFR 101.38.200 (f) DHHS LMM 103.38.204-50 (b)
c. Are all vehicles that are exempted from U.S. Government tags registered and tagged with the appropriate state or District of Columbia) tag?	
d. Who has been designated as the official responsible for approving requests for regular District of Columbia tags? Has this person's name and facsimile signature been furnished to the District of Columbia, Department of Transportation, within the last year?	FPMR, 41 CFR 101.38.204-3
e. Have vehicles regularly based or operated in the District of Columbia been registered with the District of Columbia Department of Transportation?	FPMR, 41 CFR 101.38.201-1 (a)
f. Are vehicles used in foreign countries registered and tagged in accordance with existing regulations of the country concerned?	DHHS LMM 103.38.201-50 (c)
g. Have vehicles registered with the District of Columbia been inspected within the past year? Check for inspection stickers.	FPMR, 41 CFR 101.38.201-1 (c)
h. Are all vehicles marked with the words FOR OFFICIAL USE ONLY and U.S. GOVERNMENT and NATIONAL INSTITUTES OF HEALTH (in accordance with FPMR, 41 CFR 101.38.203 and FPMR, 41 CFR 101.38.203-1)?	FPMR, 41 CFR 101.38.203 and FPMR, 41 CFR 101.38.203-1
i. Are unissued tags stored in a locked drawer, cabinet, or restricted-access storage area?	DHHS LMM 103.38.201-50 (b)
3. Maintenance of vehicles	
a. Is a scheduled maintenance program being followed? Identify scheduled maintenance intervals.	FPMR, 41 CFR 101.38.501
b. Does the maintenance program require a safety inspection?	FPMR, 41 CFR 101.38.502 (a)
c. Does the maintenance program require an emission inspection?	FPMR, 41 CFR 101.38.502 (a)

3. **Maintenance of vehicles** (continued)	**Reference**
d. Does the maintenance program meet warranty servicing requirements?	FPMR, 41 CFR 101.38.502 (a)
e. When practical and cost-effective, are commercial service facilities used for maintenance or repair?	DHHS LMM 103.38.502-50 (a)
f. Are individual maintenance records kept for each vehicle	DHHS LMM 103.38.502-50 (b)
g. Has the NIH fleet manager established one-time maintenance and repair limitations? What are they?	DHHS LMM 103.38.502-50 (c)
h. For vehicles located at facilities distant from franchised dealers, have bill-back procedures been established with manufacturers for warranty repairs?	DHHS LMM 103.38.502-50 (d)
4. Other	
a. Are administrative controls in place to ensure that fuel and services procured using the SF 149 credit card are for the official use of NIH? Are procedures in place to prevent use by unauthorized persons when credit cards are lost or stolen?	FPMR, 41 CFR 101.38.800 (d) and 41 CFR 101.38.800 (e) DHHS LMM 103.38.800-50 (a) and 103.38.800-50 (b)
b. Are accounting and reporting procedures in place to ensure accurate reporting of inventory, cost, and operating data needed to manage and control the vehicle fleet?	41 CFR 101.38.902
c. Has Standard Form (SF) 82, *Agency Report of Motor Vehicle Data*, been submitted to the DHHS fleet manager by December 1 of the last fiscal year? Separate forms should be submitted for domestic fleets and foreign fleets.	FPMR, 41 CFR 101.38.903 DHHS LMM 103.38.903-51
d. Have accidents determined to be the fault of a Government motor vehicle operator been reviewed by a Board of Survey? Were copies of the findings of the Board of Survey submitted to the DHHS fleet manager?	DHHS LMM 103.38.601-50

B. LOCAL-LEVEL RESPONSIBILITIES

		Reference
1.	**Official use of Government vehicles**	
a.	Are procedures in place to ensure that NIH motor vehicles are used only when they are the least costly method of transportation available (taking into consideration the value of employee time and actual transportation costs)?	DHHS LMM 103.38.300-50 (a) and LMM 103.38.300-50 (b)
b.	Are procedures in place to periodically inform employees and contractors using Government-owned or -leased vehicles that those vehicles must be used for official purposes only.	FPMR, 41 CFR 101.38.301 and 41 CFR 101.38.301-1
c.	Do procedures address these rules? – Transportation between domicile and place of employment is not allowed. – Operators are responsible for care, operation, maintenance, and protection during vehicle use. – Operators must obey motor vehicle traffic laws and pay fines resulting from violation of those laws. – Persons using vehicles for other than official business are subject to a suspension of at least 1 month and possibly termination – Only passengers on official Government business may be transported.	FPMR, 41 CFR 101.38.301 and 41 CFR 101.38.301-1 DHHS LMM 103.38.300-59, 101.38.300-51, 101.38.300-52, and 101.38.300-53
2.	**Procedures for vehicle use**	
a.	Is there a mechanism in place to periodically inform employees of procedures for use of vehicles?	
b.	Do these procedures include the strict use of unleaded gasoline for vehicles designed to operate on such fuel?	FPMR, 41 CFR 101.38.401-1
c.	Do these procedures include the use of self-service pumps at commercial stations?	FPMR, 41 CFR 101.38.401-2
d.	Do these procedures include a statement about using Government-owned parking spaces where allowed?	FPMR, 41 CFR 101.38.702-1
e.	Do these procedures include a statement about using SFs 91 and 94 to report accidents? Do they also include a statement about reporting accidents to the NIH fleet manager?	FPMR, 41 CFR 101.38.601 DHHS LMM 103.38.601-50
f.	Are SFs 91 and 94 carried in each vehicle?	FPMR, 41 CFR 101.38.601 (a) and 41 CFR 101.38.601 (c)
g.	Are vehicles stored to provide reasonable protection from pilferage and damage? Are they locked?	FPMR, 41 CFR 101.38.702

		Reference
3.	**Utilization**	
a.	Are the following average annual mileage standards met for each vehicle: - Sedans and station wagons: 10,000 miles - Light trucks (4 x 2s) and general-purpose vehicles [12,500 to 23,999 gross vehicle weight rating (GVWR)]: 9,000 miles - Medium trucks and general purpose vehicles (12,500 to 23,999 GVWR): 6,000 miles - Heavy trucks and general-purpose vehicles (24,000 GVWR and over): 6,000 miles - Truck tractors: 10,000 miles - All wheel drive vehicles: 7,500 miles - Other: no standards (includes ambulances, buses, and law-enforcement vehicles).	DHHS LMM 103.38.5004
b.	For vehicles not meeting the above standards and for vehicles without mileage standards, was appropriate written justification provided within the last year to the NIH fleet manager for the continued use of these vehicles? Appropriate written justification should include documentation that the vehicle is needed to meet program requirements. Justification provided should fall into one of the following four categories: - Meets mileage standard stated above - Meets NIH established time-usage criteria - Meets a special need and costs less than any alternative for meeting that need - Meets a special need and there is no alternative way of meeting that need.	DHHS LMM 103.38.5005, and 103.38.5004
c.	Are the vehicles being used the most cost-efficient type to meet the needs they are serving? Review the vehicles in fleet and evaluate their appropriateness for the function being served.	FPMR, 41 CFR 101.38.101-2
4.	***Administration***	
a.	Is there an adequate system of records of usage including logs of home-to-work usage?	DHHS LMM 103.38.5002 (c)
b.	Is there a periodic review of vehicle assignments to determine if continued assignment is justified? Provide access to written justification for vehicles.	DHHS LMM 103.38.5002 (c)

APPENDIX B

INTERVIEW QUESTIONS FOR DEDICATED VEHICLE USERS

INTERVIEW QUESTIONS FOR DEDICATED VEHICLE USERS

1. What is the mission of your department or group? How many employees are there?
2. What are each of the vehicles used for? Who uses them?
3. What is your experience with garage service? Specifically, what are the processes you follow for preventative maintenance and unexpected maintenance? How good a job does the garage do in actually maintaining the vehicles to your satisfaction?
4. What guidance have you received from the NIH Transportation Branch (Division of Logistics) on the proper use of the vehicles and accounting for that use?
5. Do you record vehicle usage? How is this done?
6. Is there one particular person responsible for the vehicles or does this responsibility lie with several persons?
7. Do you have too many, the right amount, or not enough vehicles?
8. How have you gone about getting vehicles replaced? Who initiates the process – you or the Transportation Branch?
9. How do you determine what kind of vehicles you need? Can you give us some insight into the decision-making process for selecting a particular type of vehicle?
10. Are you aware of the cost of the vehicles to your ICD?
11. Do you have any transportation needs that are not being met?
12. Can you suggest any improvements to the current vehicle management operation?

APPENDIX C

FLEET VEHICLE REQUIREMENTS PROBABILISTIC MODEL

FLEET VEHICLE REQUIREMENTS PROBABILISTIC MODEL

This appendix contains the results of calculations performed to determine the number of vehicles needed in a fleet when the demand for those vehicles is random over time. This situation occurs with the motor pool vehicles. The motor pool fleet demand is unpredictable over time. Potential vehicle users place random demands on the system. They may use a vehicle for one day or they may use it for several days. On some days, very few vehicles are needed to satisfy user demand and on other days, all of the vehicles are used and some users are unable to obtain a vehicle. In such a system with a limited number of vehicles, some percentage of users will be unable to obtain the use of a vehicle. To properly determine the number of vehicles needed in such a system, we must know the required specific rate of satisfying user demand. That rate can be expressed as the probability of obtaining a vehicle when one is desired.

Table C-1 shows the results of our calculations. The column labeled "Average Utilization" is the average number of vehicles demanded by users per unit time (e.g., a day). The three numbers in the three remaining columns show the fleet size needed to handle that utilization given three different design parameters for the probability of having a vehicle available when a user needs one. The three design probabilities for vehicle availability are 90 percent, 95 percent, and 99 percent.

TABLE C-1

FLEET VEHICLE REQUIREMENTS: PROBABILISTIC MODEL[a]

Average utilization (of vehicles per day)	Number of vehicles needed given minimum probability that vehicles are available		
	90 percent probability	95 percent probability	99 percent probability
0.5	2	2	3
1.0	3	3	4
1.5	3	4	4
2.0	4	4	5
2.5	4	5	6
3.0	5	5	6
3.5	6	6	7
4.0	6	7	8
4.5	7	7	8
5.0	7	8	9
5.5	8	8	9
6.0	8	9	10
6.5	9	9	10
7.0	9	10	11
7.5	10	10	12
8.0	10	11	12
8.5	11	11	13
9.0	11	12	13
9.5	12	12	14
10.0	12	13	14
10.5	13	14	15
11.0	13	14	15
11.5	14	15	16
12.0	14	15	16
12.5	15	16	17
13.0	16	16	17
13.5	16	17	18
14.0	17	17	18
14.5	17	18	19
15.0	18	18	19
15.5	18	19	20
16.0	19	19	20
16.5	19	20	21
17.0	20	20	21
17.5	20	21	22
18.0	21	21	22
18.5	21	22	23
19.0	22	22	24
19.5	22	23	24
20.0	23	23	25

[a]Computations assume Poisson distribution demand for vehicles and exponentially distributed time requirements for usage of vehicles. Modeled as an M/M/N queuing process.

APPENDIX D

SAMPLE FORMS FOR VEHICLE JUSTIFICATION

SAMPLE FORMS FOR VEHICLE JUSTIFICATION

Permanently assigned motor vehicles at NIH must be justified annually. Groups of vehicles used for the same or similar purposes can be justified with one certification. Please fill out this form accurately and completely and attach the appropriate certification for the justification method you choose.

1. Assigned Vehicles

Tag no.	Year	Make
_____	_____	_____

2. Please describe how these vehicles are used in your assigned area:

3. Please select one of the following five possible justification criteria and attach the appropriate worksheet and certification for that criterion. Check one:

- Mileage-use justification criterion[1] (Worksheet #1) ☐
- Time-utilization criterion – fixed use[2] (Worksheet #2) ☐
- Time-utilization criterion – random use[3] (Worksheet #3) ☐
- Economic analysis criterion[4] (Worksheet #4) ☐
- No other alternative criterion[5] (Worksheet #5) ☐

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[1]Justification is based on driving a vehicle a minimum number of miles annually.

[2]Justification based on vehicle usage assuming vehicle usage is relatively constant over time (i.e., it is used for the same purpose each day).

[3]Justification is based on usage, but assumes that vehicle usage is random, (i.e., it is used by different persons for different purposes). This situation exists in the NIH motor pool.

[4]Justification is based on showing that use of vehicle is the least-cost alternative to meeting a particular need.

[5]Justification is based on demonstrating that there is no alternative way to meet the need.

WORKSHEET #1
MILEAGE - USE JUSTIFICATION CRITERION

Mileage Requirements:

1. Sedans and station wagons, general-purpose use – 10,000 miles per year
2. Light trucks (4 x 2s) and general-purpose vehicles, less than 12,500 GVWR[6] – 9,000 miles per year
3. Medium trucks and general-purpose vehicles, 12,500 to 23,999 GVWR – 6,000 miles per year
4. Heavy trucks and general-purpose vehicles, over 24,000 GVWR – 6,000 miles per year
5. Truck tractors – 10,000 miles per year
6. All-wheel-drive vehicles – 7,500 miles per year

I certify that all of the above listed vehicles will meet or exceed the above mileage criteria. I also certify that the vehicles used are the most cost-efficient type to meet the needs being served.

_____ _____

Name Title

[6]GVWR = gross vehicle weight rating.

WORKSHEET #2
TIME – UTILIZATION CRITERION – FIXED USE

(a) Vehicle hours consumed per day (shift) = _____

(b) Hours per day (shift) = _____

(c) Number vehicles = _____

(d) Vehicle usage = (a) ÷ [(b) x (c)] = _____

I certify that all of the above information is correct and that each of the above vehicles will be in use at least 75 percent of the time during normal daily working hours. I also certify that the vehicles used are the most cost-efficient type to meet the needs being served.

_____ _____
Name Title

_____ _____
Signature Date

WORKSHEET #3
TIME – UTILIZATION CRITERION – RANDOM USE

(a) Average vehicles used per day = _____ (utilization)

(b) Number of allowed vehicles (from Table D-1) using utilization in (a) above = _____

I certify that the use of these vehicles is random in nature, that all of the information above is correct, and that the number of allowed vehicles in (b) is less than or equal to the number of vehicles assigned in this area. I also certify that the vehicles used are the most cost-efficient type to meet the needs being served.

_____	_____
Name	Title
_____	_____
Signature	Date

TABLE D-1

VEHICLES ALLOWED[a]

Utilization	Vehicles allowed
0.5	2
1.0	3
1.5	4
2.0	4
2.5	5
3.0	5
3.5	6
4.0	7
4.5	7
5.0	8
5.5	8
6.0	9
6.5	9
7.0	10
7.5	10
8.0	11
8.5	11
9.0	12
9.5	12
10.0	13
10.5	14
11.0	14
11.5	15
12.0	15
12.5	16
13.0	16
13.5	17
14.0	17
14.5	18
15.0	18
15.5	19
16.0	19
16.5	20
17.0	20
17.5	21
18.0	21
18.5	22
19.0	22
19.5	23
20.0	23

[a]Table values assume random vehicle requirements and are based on a probability of demand exceeding supply equal to 5 percent.

WORKSHEET #4
ECONOMIC ANALYSIS CRITERION

Please list alternatives to using these vehicles. Provide a cost comparison of those alternatives (attach additional sheets as needed).

I certify that this analysis reflects, to the best of my knowledge, the possible alternatives to using the vehicles above for their assigned function and that dedicated vehicle assignment is the least costly method for meeting that need.

I also certify that the vehicles used are the most cost-efficient type to meet the needs being served.

Name	Title
Signature	Date

WORKSHEET #5
NO-OTHER-ALTERNATIVE CRITERION

I certify that there are no other alternatives to meeting the need for which the above vehicles are assigned. I also certify that the vehicles used are the most cost efficient type to meet the needs being served.

_____	_____
Name	Title
_____	_____
Signature	Date

APPENDIX E

COST COMPONENTS RESULTING FROM VEHICLE COST MODEL

COST COMPONENTS RESULTING FROM VEHICLE COST MODEL

We constructed a cost model to analyze the life-cycle costs of providing different types of vehicles under a General Services Administration (GSA) lease arrangement and under National Institutes of Health (NIH) ownership and maintenance. We stratified the NIH vehicles into 11 different categories of similar vehicles. We then selected 20 vehicles from the NIH fleet (one to three from each stratification) and collected complete life-cycle costs for them. Costs gathered were purchase cost, all in-house and contract maintenance costs, and market value. We also recorded the age of each vehicle and the mileage for each year of operation. We also obtained exact GSA lease costs for those vehicles. Based on that cost information we calculated the equivalent monthly cost of the vehicles under NIH ownership and the amount that those same vehicles would have cost under a GSA lease arrangement. We used the life-cycle data to construct general cost models for both NIH ownership and for GSA lease arrangements applicable to the entire NIH fleet. The cost models yield an equivalent monthly cost given vehicle age, miles driven monthly, and purchase price in current dollars. This appendix contains the resulting cost components for the models we derived and used in our cost analysis in chapter 3.

Our model uses the following notation:

K = equivalent monthly cost of vehicle

M = miles driven per month

A = age of vehicle in years

C = purchase price of vehicle in current (92) dollars

The cost model developed uses the following formula:

$$K = a + ([b + c\ M + d\ M\ A]\ C)$$

where a, b, c, and d values are shown in Table E-1 for GSA-leased vehicles and in Table E-2 for NIH owned vehicles. Each table contains different values for each stratification of vehicle we analyzed.

TABLE E-1

COST COMPONENTS FOR GSA COST MODEL

Stratification		a value	b value	c value	d value
Number	Description				
1P	Police cruisers	105.40	0.006171	0.00001427	0
1	Sedans	105.40	0.006171	0.00001142	0
2	Station wagons	105.40	0.006171	0.00001177	0
3	Minivans	105.40	0.006171	0.00001181	0
4	Utility/carryalls	105.40	0.006171	0.00001019	0
5	Passenger vans	105.40	0.006171	0.00001014	0
6	Buses	105.40	0.006171	0.00000936	0
7	Ambulances	105.40	0.006171	0.00000587	0
8	Dump trucks	105.40	0.006171	0.00001175	0
9	Delivery vehicles	105.40	0.006171	0.00001270	0
10	Work vans	105.40	0.006171	0.00000865	0
11	Pickup trucks	105.40	0.006171	0.00001444	0

In determining total fleet costs, we collected complete data on age, purchase price, and mileage for all vehicles in the fleet and used the model to estimate equivalent monthly and annual costs for the entire fleet.

TABLE E-2

COST COMPONENTS FOR NIH COST MODEL

Stratification		a value	b value	c value	d value
Number	Description				
1P	Police cruisers	0	0.015169	0.00000446	0.00000301
1	Sedans	0	0.013728	0.00000543	0.00000301
2	Station wagons	0	0.013209	0.00000401	0.00000301
3	Minivans	0	0.015181	-0.00000367	0.00000301
4	Utility/carryalls	0	0.013119	0.00000264	0.00000301
5	Passenger vans	0	0.015342	0.00000716	0.00000301
6	Buses	0	0.010467	0.00000652	0.00000301
7	Ambulances	0	0.008981	0.00000652	0.00000301
8	Dump trucks	0	.012526	0.00000652	0.00000301
9	Delivery vehicles	0	0.012377	0.00000652	0.00000301
10	Work vans	0	0.012723	0.00000652	0.00000301
11	Pickup trucks	0	0.013056	0.00000596	0.00000301

APPENDIX F

TABLE OF ACRONYMS

APPENDIX F

TABLE OF ACRONYMS

CFR	=	Code of Federal Regulations
DHHS	=	Department of Health and Human Services
EP	=	Executive Plaza
FCRF	=	Frederick Cancer Research Facility
FMFIA	=	Federal Managers Financial Integrity Act
FPMR	=	Federal Property Management Regulations
FTE	=	full-time equivalent
GSA	=	General Services Administration
GVWR	=	gross vehicle weight rating
ICD	=	Institutes, Centers, and Divisions
IFMS	=	Inter-Agency Fleet Management Systems
LMM	=	Logistics Management Manual
NASA	=	National Aeronautics and Space Administration
NCI	=	National Cancer Institute
NCRR	=	National Center for Research Resources
NIAD	=	National Institute of Allergy and Infectious Diseases
NIH	=	National Institutes of Health
NIMH	=	National Institute of Mental Health
NINDS	=	National Institute of Neurological Disorders and Stroke
OD	=	Office of the Director
POV	=	privately owned vehicles
SF	=	Standard Forms